

Analyte	Year	Reference	Author (Date)	Publication Source	Species Common Name	Species Scientific Name	Species - Water Type	Life Stage	Exposure Route	Exposure Duration	Tissue Type	NOER (ug/g)	NOER note	LOER (ug/g)	LOER note	Effect (Growth, Survival or Reproduction)	Other Notes
Arsenic trioxide	1988	87	Cockell KA, Hilton JW (1988)	Aquat Toxicol 12:73-82	Rainbow trout	oncorhynchus mykiss	freshwater	juvenile	Diet	56 days	Carcass	8.8		17.9		Survival - reduced >20%	
Arsenic trioxide	1988	87	Cockell KA, Hilton JW (1988)	Aquat Toxicol 12:73-82	Rainbow trout	oncorhynchus mykiss	freshwater	juvenile	Diet	56 days	Carcass	0.9	control	3.1		Growth - reduced	
Disodium arsenate, heptahydrate	1988	87	Cockell KA, Hilton JW (1988)	Aquat Toxicol 12:73-82	Rainbow trout	oncorhynchus mykiss	freshwater	juvenile	Diet	56 days	Carcass	9.1		11.2		Survival - reduced >20%	
Disodium arsenate, heptahydrate	1988	87	Cockell KA, Hilton JW (1988)	Aquat Toxicol 12:73-82	Rainbow trout	oncorhynchus mykiss	freshwater	juvenile	Diet	56 days	Carcass	0.9	control	6.9		Growth - reduced	
Sodium arsenite	1966	149	Gilderhus, P.A. (1966)	Trans. Am. Fish. Soc. 95:289-296.	Bluegill	Lepomis macrochirus	freshwater	adult	Water	112 days	Whole body	5.5	4 monthly applications	11.6	16 weekly applications	Survival, Growth - reduced	Field, outdoor pools
Sodium arsenite	1966	149	Gilderhus, P.A. (1966)	Trans. Am. Fish. Soc. 95:289-296.	Bluegill	Lepomis macrochirus	freshwater	juvenile	Water	112 days	Whole body	1.8	16 weekly applications	2.24	One application	Survival, Growth - reduced	Field, outdoor pools
Sodium arsenite	1966	JA149	Gilderhus, P.A. (1966)	Trans. Am. Fish. Soc. 95:289-296.	Bluegill	Lepomis macrochirus	--	Adult	Combined	--	Whole Body	0.5	Weekly applications	1.7	Weekly applications	Reproduction - abnormal ovary and oocyte development	Artificial pond
Sodium arsenate	1990	286	McGeachy SM, DG Dixon (1990)	Can J Fish Aquat Sci 47:2228-2234	Rainbow trout	oncorhynchus mykiss	freshwater	fingerling	Water	77 days	Whole body	2.0	5deg C, residues in surviving fish	3.0	5deg C	Survival - reduced 50%	Also have survival reduced (death) - residues in dead fish - 5.4; and survival - no effect - 1.0 (no note); 15deg C survival no effect - 2-3.4
Sodium arsenate	1990	286	McGeachy SM, DG Dixon (1990)	Can J Fish Aquat Sci 47:2228-2234	Rainbow trout	oncorhynchus mykiss	freshwater	fingerling	Water	77 days	Whole body	1.0	5deg C	3.0	5deg C	Growth - reduced	Also have growth - no effect at 15deg C - 2-3.4
Sodium arsenate	1990	JA286	McGeachy SM, DG Dixon (1990)	Can J Fish Aquat Sci 47:2228-2234	Rainbow trout	oncorhynchus mykiss	--	Juvenile	Water	--	Whole body	0.85	5deg C	3.05	5deg C	Mortality	
Sodium arsenate	1990	JA286	McGeachy SM, DG Dixon (1990)	Can J Fish Aquat Sci 47:2228-2234	Rainbow trout	oncorhynchus mykiss	--	Juvenile	Water	--	Whole body	0.5	15deg C	1.5	15deg C	Mortality	
Duplicates																	
Sodium arsenite	1996	JA149	Gilderhus, P.A. (1966)	Trans. Am. Fish. Soc. 95:289-296.	Bluegill	Lepomis macrochirus	--	Adult	Combined	--	Whole Body	5.5	Monthly applications	11.6	Weekly applications	Growth - decreased weight Mortality - increased	Artificial pond
Sodium arsenite	1996	JA149	Gilderhus, P.A. (1966)	Trans. Am. Fish. Soc. 95:289-296.	Bluegill	Lepomis macrochirus	--	Juvenile	Combined	--	Whole Body	1.8	Weekly applications	2.24	One application	Growth - decreased weight Mortality - increased	Artificial pond

CADMIUM - SETAC AND ERED DATABASES

Analyte	Year	Reference	Author	Publication Source	Species Common Name	Species Scientific Name	Species - Water Type	Life Stage	Exposure Route	Exposure Duration	Tissue Type	NOER (ug/g)	NOER note	LOER (ug/g)	LOER note	Effect (Growth, Survival or Reproduction)	Other Notes	NOER used	LOER used	Geometric Mean	
Cadmium	1995	321	Nebeker AV, GS Schuytema, SL Ott	Arch Environ Contam Toxicol 29:492-499	Northwestern salamander	Ambystoma gracile	freshwater	Larvae, 3 mo	Water	10 days	Whole body	3.75	6.28			Growth - reduced		3.75	6.28	4.85	
Cadmium	1995	321	Nebeker AV, GS Schuytema, SL Ott	Arch Environ Contam Toxicol 29:492-499	Northwestern salamander	Ambystoma gracile	freshwater	Larvae, 3 mo	Water	24 days	Whole body	4.7	13.7			Survival - reduced 80%		4.7	13.7	8.02	
Cadmium	1995	321	Nebeker AV, GS Schuytema, SL Ott	Arch Environ Contam Toxicol 29:492-499	Northwestern salamander	Ambystoma gracile	freshwater	Larvae, 3 mo	Water	24 days	Whole body	1.62	4.7			Growth - reduced		1.62	4.7	2.76	
Cadmium	1995	JA321	Nebeker AV, GS Schuytema, SL Ott	Arch Environ Contam Toxicol 29:492-499	Northwestern salamander	Ambystoma gracile	--	Larval	Water	--	Whole body	3.75	4.7			Growth	Also had NOER 1.62 mg/kg and LOER 6.28 mg/kg.	3.75	4.7	4.20	
Cadmium	1986	222	Jayasekara S, Drown DB, Sharma RP	Ecotoxicol Environ Saf 11:23-30	Brine shrimp	Artemia salina	saltwater	Nauplii	Water	7 days	Whole body	0.36	5.4-7.5			Growth - reduced		0.36	5.4	1.39	
Cadmium chloride	1979	452	Thorp JH, Giesy JP, Wineriter SA	Arch Environ Contam Toxicol 8:449-456	Crayfish	Cambarus latimanus	freshwater	adult	Water	150 days	Whole body	14.9		21.96		Survival - reduced	Test site = "Outdoors; Flow-through"; "Organisms tested at ambient winter temperatures."	14.9	21.96	18.09	
Cadmium chloride	1995	365	Postma JF, Davids C	Ecotoxicol Environ Saf 30:195-202	Midge	Chironomus riparius	freshwater	larvae-adult	Water	180 days	Whole body	17.8				No effects on generations one to five	Survival reduced by third generation, reproduction after the fourth generation				
Cadmium chloride	1994	364	Postma J.F., M.C. Buckert-de Jong, N. Staats, and C. Davids	Arch Environ. Contam. Toxicol. 26:143-148.	Midge	Chironomus riparius	freshwater	larvae	Water	28-56 days	Whole body	5.6		7.6			Also have first generation survival reduced, reproduction reduced by the third generation (66 ug/g). NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	17.8	33	24.24	
Cadmium chloride	1974	485	Westerhagen HV, Rosenthal H, Sperling K-R	Helgol Wiss Meeresunters 26:416-433	Baltic herring	Clupea harengus	saltwater	embryo	Water	15 days	Whole body	7		24			Survival - reduced	Salinity 5ppt. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	5.6	7.6	6.52
Cadmium chloride	1974	485	Westerhagen HV, Rosenthal H, Sperling K-R	Helgol Wiss Meeresunters 26:416-433	Baltic herring	Clupea harengus	saltwater	embryo	Water	15 days	Whole body	11		19			Survival (viable hatch) - reduced	Salinity 16ppt. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	7	24	12.96
Cadmium chloride	1974	485	Westerhagen HV, Rosenthal H, Sperling K-R	Helgol Wiss Meeresunters 26:416-433	Baltic herring	Clupea harengus	saltwater	embryo	Water	15 days	Whole body	29		38-52			Survival (viable hatch) - reduced	Salinity 25 and 30 ppt. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	11	19	14.46
Cadmium	1981	URS240	Zaroogian, G.E., Morrison, G.	Bull. Environm. Contam. Toxicol. 27: 344-348	Eastern oyster	Crassostrea virginica	--	Adult	Absorption	--	Whole body	18.2		54			Reproduction	24% increase in abnormal embryos from exposed parents	18.2	54	31.35
Cadmium	1978	URS181	Marshall, J.S.	J. Fish. Res. Bd. Can. 35:461-469.	Cladoceran	Daphnia galeata mendotae	--	Population	Absorption	--	Whole body	5.7		8.6			Mortality	Significant decrease in average number of individuals and average biomass of population.	5.7	8.6	7.00
Cadmium nitrate	1983	135	Ferard JF, JM Jouany, R Truhaut, P Vasseur	Ecotox and Environ Saf 7:43-52	Cladoceran	Daphnia magna	freshwater	24h	Diet	20 days	Whole body	6.4		8.8			Survival - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	6.4	8.8	7.50
Cadmium nitrate	1983	135	Ferard JF, JM Jouany, R Truhaut, P Vasseur	Ecotox and Environ Saf 7:43-52	Cladoceran	Daphnia magna	freshwater	24h	Diet	20 days	Whole body	0.27		6.4			Reproduction - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	0.27	6.4	3.13
Cadmium	1981	180	Hatakeyama S, M Yasuno	Ecotox and Environ Saf 5:341-380	Cladoceran	Daphnia magna	--	Other	Ingestion	--	Whole body	0.5		0.708			Mortality	Food is cadmium fed Chlorella sp.	0.5	0.708	0.59
Cadmium chloride hydrate	1988	2	Abel, T. and F. Barlocher,	Journal of Applied Ecology, 25:223-231.	Amphipod	Gammarus fossarum	freshwater	adult	Water	14 days	Whole body	53.4		101.6			Survival - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430). Hard water 83-87 mg/L, animals not fed; ph 8.3, artificial stream system	53.4	101.6	73.66
Cadmium	1990	URS114	Swain	Aquat Toxicol 16:73-86.	Midge	Glyptotendipes pallens	--	Larval	Absorption	--	Whole body	20		26			Growth	Significant decrease in larval weight and population biomass	20	26	22.80
Cadmium chloride	1991	77	Carlson AR, Phipps GL, Mattson VR, Kosian PA, Cotter AM	Environ Toxicol Chem 10:1309-1319	Snail	Helisoma sp.	freshwater	adult	Water	10 days	Whole body	90		125			Residues in surviving organisms	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	90	125	106.07
Cadmium chloride	1991	39	Borgmann U, WP Norwood, IM Babirad	Can J Fish Aquat Sci 48:1055-1060	Amphipod	Hyalella azteca	freshwater	young	Water	42 days	Whole body	4.6		6.0			Survival - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	4.6	6.0	5.25
Cadmium	1976	SEQ97-33	Spehar, R.L.	J. Fish. Res. Board Can., Vol. 33 (1976)	Flagfish	Jordanella floridae	--	Immature	Combined	--	Whole body	10		20			Growth	Total length of females	10	20	14.14
Cadmium	1978	SEQ97-34	Spehar, R.L., Leonard, E.N., Defoe, D.L.	Trans. Am. Fish. Soc., 107(2): 354-360	Flagfish	Jordanella floridae	--	Immature	Combined	--	Whole body	0.09		0.4			Mortality	Body burden estimated from graph, fish initially exposed as embryos	0.09	0.4	0.19
Cadmium chloride	1995	405	Shazili NAM	Bull Environ Contam Toxicol 54:22-28	Seabass	Lates calcarifer	saltwater	Larvae-Juvenile	Water	16 days	Whole body	2.5		4.2			Residues in surviving fish	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	2.5	4.2	3.24
Cadmium chloride	1991	77	Carlson AR, Phipps GL, Mattson VR, Kosian PA, Cotter AM	Environ Toxicol Chem 10:1309-1319	Oligochaete	Lumbriculus variegatus	freshwater	adult	Water	10 days	Whole body	60		134			Residues in surviving organisms	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	60	134	89.67
Cadmium	1981	URS108	Hatakeyama, S. and M. Yasuno	Ecotoxicol. Environ. Safety 5:341-350.	Cladoceran	Moina macrocopa	--	Larval	Ingestion	--	Whole body	10		20			Mortality	Reduced survival. Residue at 6 days	10	20	14.14
Cadmium	1981	URS108	Hatakeyama, S. and M. Yasuno	Ecotoxicol. Environ. Safety 5:341-350.	Cladoceran	Moina macrocopa	--	Larval	Ingestion	--	Whole body	8		10			Reproduction	Reduced brood size. Residue at 6 days	8	10	8.94
Cadmium	1983	SEQ97-44	Sundelin, B.	Marine Biology 74, 203-212 (1983)	Amphipod	Monoporeia affinis	--	Adult	Combined	--	Whole body	6		11			Mortality	Viable hatch 32% salinity	6	11	8.12
Cadmium	1983	SEQ97-44	Sundelin, B.	Marine Biology 74, 203-212 (1983)	Amphipod	Monoporeia affinis	--	Adult	Combined	--	Whole body	3		6			Reproduction	Percent malformed eggs	3	6	4.24
Cadmium chloride	1985	79	Carroll RS, Williams JW, Saksa FI, Buhl RL, Neff JM	Environ Toxicol Chem 4:181-188	Mysid	Mysidopsis bahia	saltwater	adult	Water	33 days	Whole body	0.08		1.3			Growth - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	0.08	1.3	0.32
Cadmium chloride	1985	79	Carroll RS, Williams JW, Saksa FI, Buhl RL, Neff JM	Environ Toxicol Chem 4:181-188	Mysid	Mysidopsis bahia	saltwater	adult	Water	33 days	Whole body	1.3		2.4			Survival - reduced 50%	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	1.3	2.4	1.77
Cadmium chloride	1985	79	Carroll RS, Williams JW, Saksa FI, Buhl RL, Neff JM	Environ Toxicol Chem 4:181-188	Mysid	Mysidopsis bahia	saltwater	adult	Water	33 days	Whole body	2.4		4.4			Reproduction - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	2.4	4.4	3.25
Cadmium	1988	JA223	Jenkins KD, AZ Mason	Aquat Toxicol 12:229-244	Worm	Neanthes arenaceoedentata	--	Adult	Water	--	Whole body	3.60		60.7			Reproduction	Time pairing to laying of eggs	3.60	60.7	14.78
Cadmium	1986	JA224	Jenkins, K.D. and B.M. Sanders	Environmental Health Perspectives, Vol. 65, pp. 205-210,	Worm	Neanthes arenaceoedentata	--	Adult	Absorption	--	Whole body	1.12		16.8			Growth	Significant decrease in weight. Residue value taken from graph and is approximate. Radiotracer study.	1.12	16.8	4.34
Cadmium	1972	248	Kumada H, S Kimura, M Yokote, Y Matida	Bull Fresh Fish Res 22:157-165	Rainbow trout	Oncorhynchus mykiss	freshwater	3.1g	Water	210 days	Whole body	0.54		0.96			Growth - reduced		0.54	0.96	0.72
Cadmium	1972	248	Kumada H, S Kimura, M Yokote, Y Matida	Bull Fresh Fish Res 22:157-165	Rainbow trout	Oncorhynchus mykiss	freshwater	3.1g	Diet	84 days	Whole body	0.47		1.6			Growth - reduced		0.47	1.6</td	

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Cadmium chloride	1975	482	Westerhagen HV, V Dethlefsen	J Mar Biol Ass UK 55:945-975	Flounder	Pleuronectes flesus	saltwater	Embryo-Larvae	Water	17 days	Whole body (egg)	2-6		4-18		Survival - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	--	--	--
Cadmium chloride	1982	181	Hatakeyama S, M Yasuno	Bull Env Contam Toxicol 29:159-166	Guppy	Poecilia reticulata	freshwater	19 d	Diet	30 days	Whole body	0.8		0.8-1.2		Survival - reduced 16%	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	--	--	--
Cadmium chloride	1991	39	Borgmann U, WP Norwood, IM Babirad	Can J Fish Aquat Sci 48:1055-1060	Amphipod	Hyalella azteca	freshwater	young	Water	42 days	Whole body	6.4		7.8		Survival - reduced	Humic acid added. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	--	--	--
Cadmium chloride	1991	39	Borgmann U, WP Norwood, IM Babirad	Can J Fish Aquat Sci 48:1055-1060	Amphipod	Hyalella azteca	freshwater	young	Water	42 days	Whole body	4.6		7.8		Survival - reduced	EDTA added. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	--	--	--
Cadmium chloride	1991	39	Borgmann U, WP Norwood, IM Babirad	Can J Fish Aquat Sci 48:1055-1060	Amphipod	Hyalella azteca	freshwater	young	Water	42 days	Whole body	2.6		5.6		Survival - reduced	8-hydroxyquinoline (8 HQ) added. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	--	--	--
Cadmium chloride	1991	39	Borgmann U, WP Norwood, IM Babirad	Can J Fish Aquat Sci 48:1055-1060	Amphipod	Hyalella azteca	freshwater	young	Water	42 days	Whole body	8.4		15.2		Survival - reduced	90% distilled water added. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	--	--	--
Cadmium chloride	1991	39	Borgmann U, WP Norwood, IM Babirad	Can J Fish Aquat Sci 48:1055-1060	Amphipod	Hyalella azteca	freshwater	young	Water	28 days	Whole body	9.4		17.2		Survival - reduced 50%	Sediment A added. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	--	--	--
Cadmium chloride	1991	39	Borgmann U, WP Norwood, IM Babirad	Can J Fish Aquat Sci 48:1055-1060	Amphipod	Hyalella azteca	freshwater	young	Water	28 days	Whole body	12.4		19.6		Survival - reduced 50%	Sediment B added. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	--	--	--

Note:
Pink highlight = lowest geometric mean; these values were used in the species sensitivity distribution.

CHLORDANE - SETAC AND ERED DATABASES

Analyte	Year	Reference	Author	Publication Source	Species Common Name	Species Scientific Name	Species - Water Type	Life Stage	Exposure Route	Exposure Duration	Tissue Type	NOER (ug/g)	NOER note	LOER (ug/g)	LOER note	Effect (Growth, Survival or Reproduction)	Other Notes	NOER used	LOER used	Geometric Mean
Chlordane	1976	SEQ97-4	Parrish, P.R., S.C. Schimmel, D.J. Hansen, J.M. Patrick, and J. Forester	Journal of Toxicology and Environmental Health, 1:485-494, 1976	<i>Crassostrea virginica</i>	Eastern oyster	--	Adult	Combined	--	Whole Body	11		27		Growth	Estimated NOED and LOED - No Statistical Summary In Text	11	27	17.23
Chlordane	1976	SEQ97-4	Parrish, P.R., S.C. Schimmel, D.J. Hansen, J.M. Patrick, and J. Forester	Journal of Toxicology and Environmental Health, 1:485-494, 1976	<i>Cyprinodon variegatus</i>	Sheepshead minnow	--	Adult	Combined	--	Whole Body	1.38		3.18		Mortality, Reproduction - hatching success	Hatching Success Of Fry From Exposed Parents; paper also included estimated NOEDs (87 and 0.6 mg/kg) and LOED (281 mg/kg)	1.38	3.2	2.09
Chlordane	1976	SEQ97-4	Parrish, P.R., S.C. Schimmel, D.J. Hansen, J.M. Patrick, and J. Forester	Journal of Toxicology and Environmental Health, 1:485-494, 1976	<i>Palaemonetes pugio</i>	Shrimp - Grass	--	Adult	Combined	--	Whole Body	4.8		4.5		Mortality	Estimated NOED and LOED - No Statistical Summary In Text	4.8	4.5	4.65
Chlordane	1976	SEQ97-4	Parrish, P.R., S.C. Schimmel, D.J. Hansen, J.M. Patrick, and J. Forester	Journal of Toxicology and Environmental Health, 1:485-494, 1976	<i>Penaeus duorarum</i>	Shrimp - Pink	--	Adult	Combined	--	Whole Body	0.71		1.7		Mortality	Estimated NOED and LOED - No Statistical Summary In Text	0.71	1.7	1.10
Multiple Contaminants Evaluated																				
Chlordane	1977	URS92	Goodman, L.R., D.J. Hansen, J.A. Couch and J. Forester	Proc. 30th Annual Conf. SE Assn. Fish and Wildlife Agencies. p. 192-202	<i>Cyprinodon variegatus</i>	Sheepshead minnow	--	Egg-embryo	Absorption	--	Whole Body	5.6		11.7		Mortality	No Significant Effect On Mortality. Exposure to 2 ug/L technical grade heptachlor containing 65% heptachlor and 24% chlordane.	--	--	--

Note:
Pink highlight = lowest geometric mean; these values were used in the species sensitivity distribution.

Analyte	Year	Reference	Author	Publication Source	Species Common Name	Species Scientific Name	Species - Water Type	Life Stage	Exposure Route	Exposure Duration	Tissue Type	NOER (ug/g)	NOER note	LOER (ug/g)	LOER note	Effect (Growth, Survival or Reproduction)	Other Notes	NOER used	LOER used	Geometric Mean
Lead nitrate	1976	207	Holcombe, G.W., D.A. Benoit, E.N. Leonard and J.M. Mckim	J. Fish. Res. Bd. Can. 33:1731-1741	Brook trout	Salvelinus fontinalis	freshwater	embryo	Adult fish + water	60 days	Whole body	0.34	First and second generations exposed to 58 ug/L for up to 2 years.	0.4	First and second generations exposed to 119 ug/L for up to 2 years.	Survival (hatchability) - reduced	*Third generation fish*. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430)	0.34	0.4	0.37
Lead	2001	MEC03-238	Radenac, G. D. Fichet, P. Miramand	Mar Environ Res 51: 151-166	Sea Urchin	Paracentrotus lividus	--	Larval	Water	--	Whole Body	0.58		31.56		Survival		0.58	31.56	4.28
Lead	1996	MEC03-301	MacLean RS, U Borgmann, and DG Dixon	Can J Fish Aquat Sci 53:2212-2220	Amphipod - Freshwater	Hyalella azteca	freshwater	Adult	Water	--	Whole Body	82.88		130.328		Survival	Result of modelling mortality rates vs Pb conc.	82.88	130.328	103.93
Lead	1996	MEC03-301	MacLean RS, U Borgmann, and DG Dixon	Can J Fish Aquat Sci 53:2212-2220	Amphipod - Freshwater	Hyalella azteca	freshwater	Immature	Water	--	Whole Body	48.277		82.67		Survival	Result of modelling mortality rates vs Pb conc.	48.277	82.67	63.17
Lead	1996	MEC03-301	MacLean RS, U Borgmann, and DG Dixon	Can J Fish Aquat Sci 53:2212-2220	Amphipod - Freshwater	Hyalella azteca	freshwater	Adult	Water	--	Whole Body	58.844		85.78		Survival	Tests run with 4-5 wk old amphipods: With pre-exposure to 100nM Pb. Result of modelling mortality rates vs Pb conc.	58.844	85.78	71.05
Lead	1996	MEC03-301	MacLean RS, U Borgmann, and DG Dixon	Can J Fish Aquat Sci 53:2212-2220	Amphipod - Freshwater	Hyalella azteca	freshwater	Adult	Water	--	Whole Body	44.755		68.376		Survival	Tests run with 4-5 wk old amphipods: Without pre-exposure to 100nM Pb. Result of modelling mortality rates vs Pb conc.	44.755	68.376	55.32
Lead	1994	URS151	Kraak, M.H.S., Y.A. Wink, S.C. Stuijzland, M.C. Buckert-de Jong, C.J. De Groot and W. Admiraal	Aquat Toxicol 30:77-89.	Zebra mussel	Dreissena polymorpha	--	Adult	Absorption	--	Whole Body	35		200		Growth - reduced weight gain in survivors; Mortality - increased		35	200	83.67
Duplicates of Overlapping NOER/LOER Ranges																				
Lead nitrate	1994	245	Kraak, M.H.S., Y.A. Wink, S.C. Stuijzland, M.C. Buckert-de Jong, C.J. De Groot and W. Admiraal	Aquat Toxicol 30:77-89.	Zebra mussel	Dreissena polymorpha	freshwater	adult, 1.6-2.0cm	Water	70 days	Soft parts	36		200		Survival, growth - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430)	--	--	--
Lead	1976	URS124	Holcombe, G.W., D.A. Benoit, E.N. Leonard and J.M. Mckim	J. Fish. Res. Bd. Can. 33:1731-1741	Brook trout	Salvelinus fontinalis	--	Egg-embryo	Absorption	--	Eggs	0.34	First and second generations exposed to 58 ug/L for up to 2 years.	0.4	First and second generations exposed to 119 ug/L for up to 2 years.	Development	Reduced third generation embryo hatchability due to spine deformities. First and second generation exposed to 119 ug/L for up to 2 years.	--	--	--
Lead	1976	URS124	Holcombe, G.W., D.A. Benoit, E.N. Leonard and J.M. Mckim	J. Fish. Res. Bd. Can. 33:1731-1741	Brook trout	Salvelinus fontinalis	--	Egg-embryo	Absorption	--	Whole Body	2.55	First and second generations exposed to 58 ug/L for up to 2 years.	4	First and second generations exposed to 119 ug/L for up to 2 years.	Growth - reduced weight gain in third generation		--	--	--
Lead nitrate	1976	207	Holcombe, G.W., D.A. Benoit, E.N. Leonard and J.M. Mckim	J. Fish. Res. Bd. Can. 33:1731-1741	Brook trout	Salvelinus fontinalis	freshwater	embryo-juvenile	Adult fish + water	84 days	Whole body	2.5-5.1		4.0-8.8		Growth - reduced	*Third generation fish*. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430)	DON'T USE - OVERLAPPING RANGES		

Note:
Pink highlight = lowest geometric mean; these values were used in the species sensitivity distribution.

Analyte	Year	Reference	Author	Publication Source	Species Common Name	Species Scientific Name	Species - Water Type	Life Stage	Exposure Route	Exposure Duration	Tissue Type	NOER (ug/g)	NOER note	LOER (ug/g)	LOER note	Effect (Growth, Survival or Reproduction)	Other Notes
Pentachlorophenol	1989	JB19	Hickie, B.E., Dixon, D.G., and J.F. Leatherland	Fish Physiology and Biochemistry 6(3): 175-185	Trout - Rainbow	Oncorhynchus mykiss	--	Juvenile	Ingestion	--	Whole body	29.8	pH 5.5-9, residues in surviving fish	72.7		Growth	
Pentachlorophenol	1980	239	Kobayashi K, Kishino T	Bull Jpn Soc Sci Fish 46:167-170	Goldfish	Carassius auratus	freshwater	1.3g	Water	0.2 days	Whole body	<80	pH 5.5-9, residues in dead fish	82-115	pH 5.5-9, residues in dead fish	Survival - reduced - death	Also have survival - no effect for pH 10 - 20
Pentachlorophenol	1985	421	Spehar, R.L., Nelson,H.P., Swanson, M.J., Renoos, J.W.	Environmental Toxicology and Chemistry, Vol. 4, pp 389-397, 1985	Fathead minnow	pimephales promelas	freshwater	larvae, juvenile	Water	32 days	Whole body	12.3		25.1		Growth - reduced	pH 7.5
Pentachlorophenol	1985	421	Spehar, R.L., Nelson,H.P., Swanson, M.J., Renoos, J.W.	Environmental Toxicology and Chemistry, Vol. 4, pp 389-397, 1985	Fathead minnow	pimephales promelas	freshwater	larvae, juvenile	Water	32 days	Whole body	12.6		22.1		Growth - reduced	pH 8.0
Pentachlorophenol	1985	421	Spehar, R.L., Nelson,H.P., Swanson, M.J., Renoos, J.W.	Environmental Toxicology and Chemistry, Vol. 4, pp 389-397, 1985	Fathead minnow	pimephales promelas	freshwater	larvae, juvenile	Water	32 days	Whole body	17.8		35.1		Survival - reduced 25%	pH 8.5
Pentachlorophenol	1985	421	Spehar, R.L., Nelson,H.P., Swanson, M.J., Renoos, J.W.	Environmental Toxicology and Chemistry, Vol. 4, pp 389-397, 1985	Fathead minnow	pimephales promelas	freshwater	larvae, juvenile	Water	32 days	Whole body	21.5		45.9		Survival - reduced - 77%	pH 6.5
Pentachlorophenol	1985	421	Spehar, R.L., Nelson,H.P., Swanson, M.J., Renoos, J.W.	Environmental Toxicology and Chemistry, Vol. 4, pp 389-397, 1985	Fathead minnow	pimephales promelas	freshwater	larvae, juvenile	Water	32 days	Whole body	22.1		43.8		Survival - reduced 71%	pH 8.0
Pentachlorophenol	1985	SEQ97-36	Spehar, R.L., Nelson,H.P., Swanson, M.J., Renoos, J.W.	Environmental Toxicology and Chemistry, Vol. 4, pp 389-397, 1985	Fathead minnow	pimephales promelas	--	Embryo	Combined	--	Whole body	35.1		69		Growth	pH 8.5
Pentachlorophenol	1991	436	Tachikawa M, Sawamura R, Okada S, Hamada A	Arch Environ Contam Toxicol 21:146-151	Killifish	Oryzias latipes	freshwater	0.2-0.4g	Water	5 days	Whole body	35		65-122		Survival - reduced	Also have survival - no effect for test duration of 9 days - 60
Duplicates or Overlapping Ranges																	
Pentachlorophenol	1985	SEQ97-36	Spehar, R.L., Nelson,H.P., Swanson, M.J., Renoos, J.W.	Environmental Toxicology and Chemistry, Vol. 4, pp 389-397, 1985	Fathead minnow	pimephales promelas	--	Embryo	Combined	--	Whole body	12.3		25.1		Growth	pH 7.5
Pentachlorophenol	1985	SEQ97-36	Spehar, R.L., Nelson,H.P., Swanson, M.J., Renoos, J.W.	Environmental Toxicology and Chemistry, Vol. 4, pp 389-397, 1985	Fathead minnow	pimephales promelas	--	Embryo	Combined	--	Whole body	12.6		22.1		Growth	pH 8.0
Pentachlorophenol	1985	SEQ97-36	Spehar, R.L., Nelson,H.P., Swanson, M.J., Renoos, J.W.	Environmental Toxicology and Chemistry, Vol. 4, pp 389-397, 1985	Fathead minnow	pimephales promelas	--	Embryo	Combined	--	Whole body	17.8		35.1		Mortality	pH 8.5
Pentachlorophenol	1985	SEQ97-36	Spehar, R.L., Nelson,H.P., Swanson, M.J., Renoos, J.W.	Environmental Toxicology and Chemistry, Vol. 4, pp 389-397, 1985	Fathead minnow	pimephales promelas	--	Embryo	Combined	--	Whole body	21.5		45.9		Mortality	pH 6.5
Pentachlorophenol	1985	SEQ97-36	Spehar, R.L., Nelson,H.P., Swanson, M.J., Renoos, J.W.	Environmental Toxicology and Chemistry, Vol. 4, pp 389-397, 1985	Fathead minnow	pimephales promelas	--	Embryo	Combined	--	Whole body	22.1		43.8		Mortality	pH 8.0
Pentachlorophenol	1995	234	Kishino T, Kobayashi K	Water Res 29:431-442	Goldfish	Carassius auratus	freshwater	1.3g	Water	0.2 days	Whole body	18-82	pH 5.5-10, residues in surviving fish	82-115	pH 5.5-10, residues in dead fish	Survival - reduced - death	
Pentachlorophenol	1995	196	Hickie BE, McCarty LS, Dixon DG	Environ Toxicol Chem 14:2187-2197	Fathead minnow	pimephales promelas	freshwater	larvae, 48-72h	Water	0.08 - 6 days	Whole body	45-151	"Radiotracer study; 0.76 of 6 d continuous exposure LC50; residues in surviving fish"	79.9	"Radiotracer study; residues in dead fish; several studies, single pulse, multiple pulse or continuous exposure"	Survival - reduced - death	

Analyte	Year	Reference	Author	Publication Source	Species Common Name	Species Scientific Name	Species - Water Type	Life Stage	Exposure Route	Exposure Duration	Tissue Type	NOER (ug/g)	NOER note	LOER (ug/g)	LOER note	Effect (Growth, Survival or Reproduction)	Other Notes	NOER used	LOER used	Geometric Mean
2,2',3,3',5,5'-Hexachlorobiphenyl	1988	344	Opperhuizen A, Schrap SM	Chemosphere 17:253-262	Guppy	<i>Poecilia reticulata</i>	freshwater	adult, male	Diet	65 days	Whole body	100	281-355			Survival - reduced		100	281	167.63
2,2',3,3',4,4',6,6'-Octachlorobiphenyl	1988	344	Opperhuizen A, Schrap SM	Chemosphere 17:253-262	Guppy	<i>Poecilia reticulata</i>	freshwater	adult, male	Diet	65 days	Whole body	100	144-446			Survival - reduced		100	144	120.00
3,3',4,4'-Tetrachlorobiphenyl	1990	115	Dillon TM, Benson WH, Stackhouse RA, Crider AM	Environ Toxicol Chem 9:1317-1326	Cladoceran	<i>Daphnia magna</i>	freshwater	neonate-adult	Water	21 days	Whole body	1.3		11		Growth - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430)	1.3	11	3.78
3,3',4,4',5-Pentachlorobiphenyl (PCB 126)	1995	496	Zabel EW, Cook PM, Peterson RE	Environ Toxicol Chem 14:2175-2179	Lake trout	<i>Salvelinus namaycush</i>	freshwater	egg-sac fry	Water	2 days in contaminated water, 78 days in clean water	Whole body (egg)	13.2		27.2		Survival (sac fry) - reduced 30%	Radiotracer study	13.2	27.2	18.95
PCB 153	2001	MEC03-124	Hwang, H., S.W. Fisher, P.F. Landrum	Aquat Toxicol 52:251-267	Midge	<i>Chironomus riparius</i>	--	Larval	Ingestion	--	Whole body	--		5.774		Reproduction	Number of eggs 2nd to pupa exposure, 22 days was the term of the longest exposure/ developmental time.	5.774		
PCB 153	2001	MEC03-124	Hwang, H., S.W. Fisher, P.F. Landrum	Aquat Toxicol 52:251-267	Midge	<i>Chironomus riparius</i>	--	Larval	Ingestion	--	Whole body	--		10.105		Reproduction	Number of eggs 2nd to adult exposure, 27 days was the term of the longest exposure/ developmental time for females.	10.105		
PCB 153	2001	MEC03-124	Hwang, H., S.W. Fisher, P.F. Landrum	Aquat Toxicol 52:251-267	Midge	<i>Chironomus riparius</i>	--	Larval	Ingestion	--	Whole body	--		111.87		Reproduction	number of eggs (2) 2nd to adult exposure. 27 days was the term of the longest exposure/ developmental time.	111.87		
Multiple contaminants																				
PCB-congeners	1998	MEC04-046	Orn, S., P.L. Anderson, L. Forlin, M. Tyskild, L. Norrgren	Arch Environ Contam Toxicol 35:53-57	Zebra Danio	<i>Danio rerio</i>	--	Adult	Ingestion	--	Whole body	1.9		0.14		Growth	PCBs 41, 51, 60, 68, 91, 99, 104, 112, 115, 126, 143, 153, 169, 184, 193 - weight			
PCB-congeners	1998	MEC04-046	Orn, S., P.L. Anderson, L. Forlin, M. Tyskild, L. Norrgren	Arch Environ Contam Toxicol 35:53-57	Zebra Danio	<i>Danio rerio</i>	--	Adult	Ingestion	--	Whole body	0.14		1.1		Mortality	PCBs 41, 51, 60, 68, 91, 99, 104, 112, 115, 126, 143, 153, 169, 184, 193			
PCB-congeners	1998	MEC04-046	Orn, S., P.L. Anderson, L. Forlin, M. Tyskild, L. Norrgren	Arch Environ Contam Toxicol 35:53-57	Zebra Danio	<i>Danio rerio</i>	--	Adult	Ingestion	--	Whole body	1.9		1.1		Reproduction	PCBs 41, 51, 60, 68, 91, 99, 104, 112, 115, 126, 143, 153, 169, 184, 193 - Ovary weight			

Note:
Pink highlight = lowest LOER; these values were used in the species sensitivity distribution.

Analyte	Year	Reference	Author	Publication Source	Species Common Name	Species Scientific Name	Species - Water Type	Life Stage	Exposure Route	Exposure Duration	Tissue Type	NOER (ug/g)	NOER note	LOER (ug/g)	LOER note	Effect (Growth, Survival or Reproduction)	Other Notes	NOER used	LOER used	Geometric Mean
Aroclor 1254	1973	174	Hanson DJ, Schimmel SC, Forester J	Proceedings of 27th Annual Conference, Southeastern Association of Game and Fish Commissioners, Hot Springs AK. 1973 Oct 14-17, p420-426	Sheepshead minnow	Cyprinodon variegatus	saltwater	embryo	Adult fish	5 days in clean water	Whole body	27		170		Survival - reduced 27%	Embryos hatched in clean water	27	170	67.75
Aroclor 1254	1973	174	Hanson DJ, Schimmel SC, Forester J	Proceedings of 27th Annual Conference, Southeastern Association of Game and Fish Commissioners, Hot Springs AK. 1973 Oct 14-17, p420-426	Sheepshead minnow	Cyprinodon variegatus	saltwater	embryo-larvae	Adult fish	28 days in clean water	Whole body (embryo)	0.88		5.1		Survival (larvae) - reduced 23%	Embryos hatched and larvae raised in clean water	0.88	5.1	2.12
Aroclor 1016	1975	175	Hanson DJ, Schimmel SC, Forester J	Trans Am Fish Soc 104:584-588	Sheepshead minnow	Cyprinodon variegatus	saltwater	juvenile	Water	28 days	Whole body	230		1100		Survival - reduced 88%		230	1100	502.99
Aroclor 1248	1974	319	Nebeker AV, Puglisi FA	Trans Am Fish Soc 103:722-728	Sheepshead minnow	Cyprinodon variegatus	saltwater	larvae	Water	33 days	Whole body	57		200		Survival - reduced		57	200	106.77
Aroclor 1242	1974	319	Nebeker AV, Puglisi FA	Trans Am Fish Soc 103:722-728	Amphipod	Gammarus pseudolimnaeus	freshwater	juvenile-adult	Water	60 days	Whole body	127		552		Reproduction - reduced		127	552	264.77
Aroclor 1242	1974	319	Nebeker AV, Puglisi FA	Trans Am Fish Soc 103:722-728	Amphipod	Gammarus pseudolimnaeus	freshwater	juvenile-adult	Water	60 days	Whole body	246-387		409		Survival - reduced - death		387	409	397.85
Aroclor 1242	1974	319	Nebeker AV, Puglisi FA	Trans Am Fish Soc 103:722-728	Amphipod	Gammarus pseudolimnaeus	freshwater	juvenile-adult	Water	60 days	Whole body	71-80		246-387		Reproduction - reduced		80	246	140.29
Aroclor 1016	1977	322	Neff JM, Giam CS	Vemberg FJ, Calabrese A, Thurberg FP, Vemberg WB, editors. Physiological responses of marine biota to pollutants. New York: Academic Press. P21-35.	Horseshoe crab	Limulus polyphemus	saltwater	juvenile	Water	96 days	Soft parts	7.7		31.9		Survival - reduced >50%	Mean weight 23 mg	7.7	31.9	15.67
Aroclor 1016	1977	322	Neff JM, Giam CS	Vemberg FJ, Calabrese A, Thurberg FP, Vemberg WB, editors. Physiological responses of marine biota to pollutants. New York: Academic Press. P21-35.	Horseshoe crab	Limulus polyphemus	saltwater	juvenile	Water	96 days	Soft parts	11.2		92.8		Survival - reduced >50%	Mean weight 54 mg	11.2	92.8	32.24
Aroclor 1254	1977	283	Mayer FL, Mehrle Jr PM, Sanders HO	Arch Environ Contam Toxicol 5:501-511	Coho salmon	Oncorhynchus kisutch	freshwater	fingerling	Diet	265 days	Whole body	54-57		645-659	All fish died between 260 and 265 days of exposure	Survival - reduced - death	Radiotracer study. NOER also for growth - no effect	57	645	191.74
Aroclor 1254	1974	329	Nimmo, D.R., J. Forester, P.T. Heitmuller, and G.H. Cook.	Bull. Environ. Contam. Toxicol. 11(4):303-308.	Grass shrimp	Palaemonetes pugio	saltwater	mixed life stages	Water	7 days	Whole body	5.4		65.0		Survival - reduced - 60%		5.4	65.0	18.73
Aroclor 1254	1974	329	Nimmo, D.R., J. Forester, P.T. Heitmuller, and G.H. Cook.	Bull. Environ. Contam. Toxicol. 11(4):303-308.	Grass shrimp	Palaemonetes pugio	saltwater	mixed life stages	Water	16 days	Whole body	18.0		27.0		Survival - reduced - 45%		18.0	27.0	22.05
Aroclor 1254	1970	122	Duke TW, Lowe JL, Wilson Jr AJ	Bull Environ. Contam. Toxicol 5:171-180	Pink shrimp	Penaeus duorarum	saltwater	juvenile	Water	2 days	Whole body	1.3		3.9		Survival - reduced - death		1.3	3.9	2.25
Aroclor 1254	1975	145	Freeman HC, Idler DR	Can J Biochem 53:666-670	Brook trout	Salvelinus fontinalis	freshwater	embryo	Adult fish	21 days	Whole body	<0.5		77.9		Survival - reduced		0.5	77.9	6.24
Aroclor 1254	1978	278	Mauk, W.L., P.M. Mehrle, and F.L. Mayer.	J. Fish. Res. Bd. Can. 35:1084-1088.	Brook trout	Salvelinus fontinalis	freshwater	eyed egg-fry	Water	127 days	Whole body	71		125		Survival (fry) - reduced 21%		71	125	94.21
Aroclor 1254	1978	278	Mauk, W.L., P.M. Mehrle, and F.L. Mayer.	J. Fish. Res. Bd. Can. 35:1084-1088.	Brook trout	Salvelinus fontinalis	freshwater	eyed egg-fry	Water	127 days	Whole body	31		71		Growth - reduced		31	71	46.91
Aroclor 1254	2003	MEC03-040	Fisher, M.A., A.M. Jelaso, A. Predenkiewicz, L. Schuster, J. Means, C.F. Ide.	Environ Tox & Chem 22(2):321-328	African Clawed Frog	Xenopus laevis	--	Larval	Water	--	Whole body	114.09		956.44		Mortality		114.09	956.44	330.33
Duplicate or Overlapping NOER/LOER Ranges																				
Aroclor 1254	1974	JA329	Nimmo, D.R., J. Forester, P.T. Heitmuller, and G.H. Cook.	Bull. Environ. Contam. Toxicol. 11(4):303-308.	Grass shrimp	Palaemonetes pugio	--	not specified	Absorption	16 days	Whole body	18		27		Mortality - increased 45%		--	--	--
Aroclor 1254	1978	JA278	Mayer.	J. Fish. Res. Bd. Can. 35:1084-1088.	Brook trout	Salvelinus fontinalis	--	Embryo	Absorption	--	Whole body	71		125		Mortality - increased 18%		--	--	--
Aroclor 1248	1978	107	DeFoe DL, Veith GD, Carlson RW	J Fish Res Board Can 35:997-1002	Fathead minnow	Pimephales promelas	freshwater	embryo-adult	Water	240 days	Whole body	2.8-30.6		11-50		Growth - reduced	Female fish had the highest residues	I USE - RANGES OVERLAP		
Aroclor 1254	1974	320	Nebeker AV, Puglisi FA, DeFoe DL	Trans Am Fish Soc 103:562-568	Fathead minnow	Pimephales promelas	freshwater	<24h-adult	Water	240 days	Whole body	54-133		83-553		Reproduction - reduced		DON'T USE - RANGES OVERLAP		

Note:
Pink highlight = lowest LOER; these values were used in the species sensitivity distribution.

Analyte	Year	Reference	Author	Publication Source	Species Common Name	Species Scientific Name	Species - Water Type	Life Stage	Exposure Route	Exposure Duration	Tissue Type	NOER (ug/g)	NOER note	LOER (ug/g)	LOER note	Effect (Growth, Survival or Reproduction)	Other Notes
Pyrene	1994	JA247	Kukkonen, J. and P.F. Landrum	Environmental Toxicology and Chemistry, 13(9):1457-1468.	Oligochaete	Lumbriculus variegatus	--	adult	Combined	--	Whole body	380		465		Mortality - increased 17%	Radiotracer study
Pyrene	1994	JA247	Kukkonen, J. and P.F. Landrum	Environmental Toxicology and Chemistry, 13(9):1457-1468.	Oligochaete	Lumbriculus variegatus	--	adult	Combined	--	Whole body	--		465		Growth	Increased weight loss
Duplicate or multiple variables (i.e. UV-A exposure)																	
Pyrene	1994	247	Kukkonen, J. and P.F. Landrum	Environmental Toxicology and Chemistry, 13(9):1457-1468.	Worm	Lumbriculus variegatus	freshwater	adult	Sediment	7 days	Whole body	380		465		Survival - reduced 17%	Radiotracer study
Pyrene	1997	14	Ankley GT, Erickson RJ, Sheedy BR, Kosian PA, Mattson VR	Aquat Toxicol 37: 37-50	Worm	Lumbriculus variegatus	freshwater	adult	Water	4 dark, 4 light in clean water	Whole body	10		18.6		Survival - reduced	UV-A exposure of 16.4 mW/cm ² ; median time to death 96h

SELENIUM - SETAC AND ERED DATABASES

Analyte	Year	Reference	Author	Publication Source	Species Common Name	Species Scientific Name	Species - Water Type	Life Stage	Exposure Route	Exposure Duration	Tissue Type	NOER (ug/g)	NOER note	LOER (ug/g)	LOER note	Effect (Growth, Survival or Reproduction)	Other Notes	NOER used	LOER used	Geometric Mean
Inorganic selenium																				
Selenium	1990	URS129	Ingersoll, C.G., F.J. Dwyer and T.W. May	Environ. Toxicol. Chem. 9:1171-1181.	Water flea	Daphnia magna	--	Immature	Absorption	--	Whole body	2.94		6.34		Reproduction - see Note	Decrease in total young and young per female, delayed time to first brood.	2.94	6.34	4.32
6:1 mixture selenite to selenite	1990	215	Ingersoll, C.G., F.J. Dwyer and T.W. May	Environ. Toxicol. Chem. 9:1171-1181.	Cladoceran	Daphnia magna	freshwater	<24h	Water	21 days	Whole body	0.26	Conservative residue value (see note)	6.34		Growth, reproduction - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430). NOER = "conservative residue value" = "The lowest effect level to effect exposure concentrations were 156 and 95 ug/L, respectively, but the measured body burden at 156 ug/L was 2.0 ug/g (wet weight), whereas at 85 ug/L it was 4.22 ug/g (wet weight). Because of this discrepancy, the body burden at the next lower water exposure was selected as the no effect residue level."	0.26	6.34	1.28
6:1 mixture selenite to selenite	1993	85	Cleveland L, Little EE, Buckler DR, Wiedmeyer RH	Aquat Toxicol 27:265-280	Bluegill	Lepomis macrochirus	freshwater	juvenile	Water	60 days	Whole body	0.8		1.08		Survival - reduced 50%	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	0.8	1.08	0.93
6:1 mixture selenite to selenite + seleno-L-methionine	1993	95	Coyle JJ, Buckler DR, Ingersoll CG, Farchild JF, May TW	Environ Toxicol Chem 12:551-565	Bluegill	Lepomis macrochirus	freshwater	larvae	Water, adult fish	30 days	Egg	23.8		41.7		Survival - reduced	*Residues in 30d old larvae ranged from 3.3-6.0 ug/g; brine shrimp fed to larvae contained 2.7 ug/g Se*	23.8	41.7	31.50
Sodium selenite	1978	152	Gissel Nielsen M, Gissel-Nielsen G	Arctic Environ 4:85-91	Rainbow trout	Oncorhynchus mykiss	freshwater	3-6g	Water	0.25 days in contaminated water	Whole body	1.3		5.8	All fish died within 24h	Survival - reduced - death	Radotracer study. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	1.3	5.8	2.75
Sodium selenite	1978	152	Gissel Nielsen M, Gissel-Nielsen G	Arctic Environ 4:85-91	Rainbow trout	Oncorhynchus mykiss	freshwater	3-6g	Water	28 days	Whole body	0.5		1.9		Survival - reduced 30%	Radotracer study. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430). Also have survival reduced - death (2.5).	0.5	1.9	0.97
Sodium selenite	1983	198	Hilton JW, Hodson PV	J Nutr 113:1241-1248	Rainbow trout	Oncorhynchus mykiss	freshwater	juvenile	Diet	112 days	Carcass	0.2		0.8		Growth - reduced	High water salinity = 28g/L. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	0.2	0.8	0.40
Sodium selenite	1983	198	Hilton JW, Hodson PV	J Nutr 113:1241-1248	Rainbow trout	Oncorhynchus mykiss	freshwater	juvenile	Diet	112 days	Carcass	0.14		0.9		Growth - reduced	Low carbohydrate diet. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	0.14	0.9	0.35
Sodium selenite	1982	200	Hilton JW, Hodson PV, Slinger SJ	Comp Biochem Physiol 71C:49-55	Rainbow trout	Oncorhynchus mykiss	freshwater	fingerling-juvenile	Diet	168 days	Carcass	0.08		0.32		Growth - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	0.08	0.32	0.16
Sodium selenite	1982	200	Hilton JW, Hodson PV, Slinger SJ	Comp Biochem Physiol 71C:49-55	Rainbow trout	Oncorhynchus mykiss	freshwater	fingerling-juvenile	Diet	168 days	Carcass	0.32		0.92		Survival (and growth) - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	0.32	0.92	0.54
Selenium	2003	MEC04-272	Hamilton SJ	Ecotox and Environ Saf 56:201-210	Chinook salmon	Oncorhynchus tshawytscha	--	Not specified	Not specified	--	Whole body	0.54		0.8		Growth	Review paper Hamilton et al 1990	0.54	0.8	0.66
Selenium	2003	MEC04-272	Hamilton SJ	Ecotox and Environ Saf 56:201-210	Chinook salmon	Oncorhynchus tshawytscha	--	Not specified	Not specified	--	Whole body	0.18		0.66		Growth	Review paper URS 2000	0.18	0.66	0.34
Inorganic selenium	1990	162	Hamilton SJ, Buhl KJ, Faerber NL, Wiedmeyer RH, Bullard FA	Environ Toxicol Chem 9:347-358	Chinook salmon	Oncorhynchus tshawytscha	freshwater	fingerling	Diet	120 days	Whole body	0.8		1.6		Growth - reduced	Salinity = 0.6-1.2g/L. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	0.8	1.6	1.13
Inorganic selenium	1990	162	Hamilton SJ, Buhl KJ, Faerber NL, Wiedmeyer RH, Bullard FA	Environ Toxicol Chem 9:347-358	Chinook salmon	Oncorhynchus tshawytscha	freshwater	fingerling	Diet	120 days	Whole body	2.8		5.8		Survival - reduced	Last 10 days at salinity = 28g/L. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	2.8	5.8	4.03
Selenium	1990	URS98	Hamilton, S.J., K.J. Buhl, N.L. Faerber, R.H. Wiedmeyer and F.A. Bullard	Environ. Toxicol. Chem. 9:347-358	Chinook salmon	Oncorhynchus tshawytscha	--	Immature	Ingestion	120 days	Whole body	2.56		4.64		Growth - reduced weight gain and length		2.56	4.64	3.45
Selenium	1990	URS98	Hamilton, S.J., K.J. Buhl, N.L. Faerber, R.H. Wiedmeyer and F.A. Bullard	Environ. Toxicol. Chem. 9:347-358	Chinook salmon	Oncorhynchus tshawytscha	--	Immature	Ingestion	120 days	Whole body	1.6		2.88		Growth - reduced length		1.6	2.88	2.15
Selenium	1990	URS98	Hamilton, S.J., K.J. Buhl, N.L. Faerber, R.H. Wiedmeyer and F.A. Bullard	Environ. Toxicol. Chem. 9:347-358	Chinook salmon	Oncorhynchus tshawytscha	--	Immature	Ingestion	120 days	Whole body	0.72		1.6		Growth - reduced weight gain		0.72	1.6	1.07
Selenium	1990	URS98	Hamilton, S.J., K.J. Buhl, N.L. Faerber, R.H. Wiedmeyer and F.A. Bullard	Environ. Toxicol. Chem. 9:347-358	Chinook salmon	Oncorhynchus tshawytscha	--	Immature	Ingestion	120 days	Whole body	1.02		0.68		Growth - reduced weight gain and length		1.02	0.68	0.83
Inorganic selenium	1990	162	Hamilton SJ, Buhl KJ, Faerber NL, Wiedmeyer RH, Bullard FA	Environ Toxicol Chem 9:347-358	Chinook salmon	Oncorhynchus tshawytscha	freshwater	larvae, swim-up	Diet	60 days	Whole body	0.20		0.66		Growth - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	0.20	0.66	0.36
Selenium	1990	URS98	Hamilton SJ, Buhl KJ, Faerber NL, Wiedmeyer RH, Bullard FA	Environ. Toxicol. Chem. 9:347-358	Chinook salmon	Oncorhynchus tshawytscha	--	Larval	Ingestion	60 days	Whole body	1.06		0.66		Growth - reduced weight gain and length		1.06	0.66	0.84
Selenium	1990	URS98	Hamilton SJ, Buhl KJ, Faerber NL, Wiedmeyer RH, Bullard FA	Environ. Toxicol. Chem. 9:347-358	Chinook salmon	Oncorhynchus tshawytscha	--	Larval	Ingestion	60 days	Whole body	2.08		4.68		Mortality - increased 37%		2.08	4.68	3.12
Inorganic selenium	1990	162	Hamilton SJ, Buhl KJ, Faerber NL, Wiedmeyer RH, Bullard FA	Environ Toxicol Chem 9:347-358	Chinook salmon	Oncorhynchus tshawytscha	freshwater	larvae, swim-up	Diet	90 days	Whole body	0.8		1.3		Survival - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	0.8	1.3	1.02
Inorganic selenium	1990	162	Hamilton SJ, Buhl KJ, Faerber NL, Wiedmeyer RH, Bullard FA	Environ Toxicol Chem 9:347-358	Chinook salmon	Oncorhynchus tshawytscha	freshwater	larvae, swim-up	Diet	90 days	Whole body	0.54		0.8		Growth - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	0.54	0.8	0.66
Selenium	1990	URS98	Hamilton, S.J., K.J. Buhl, N.L. Faerber, R.H. Wiedmeyer and F.A. Bullard	Environ. Toxicol. Chem. 9:347-358	Chinook salmon	Oncorhynchus tshawytscha	--	Larval	Ingestion	90 days	Whole body	0.8		1.08		Mortality - increased		0.8	1.08	0.93
Selenium	1989	JA336	Ogle, R.S. and A.W. Knight	Arch Environ. Contam. Toxicol. 18:795-803.	Fathead minnow	Pimephales promelas	freshwater	adult	Diet	135-140 days	Whole body	1.00		1.22		Growth - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	1.00	1.22	1.10
Organic Selenium																				
Seleno-DL-methionine	1993	30	Besser JM, Canfield TJ, LaPoint TW	Environ Toxicol Chem 12:57-72	Cladocean	Daphnia magna	freshwater	4-5d	Water	4 days	Whole body	20.4		29.6		Survival, growth - reduced	Radotracer study, NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	20.4	29.6	24.57
Seleno-DL-methionine	1990	162	Hamilton SJ, Buhl KJ, Faerber NL, Wiedmeyer RH, Bullard FA	Environ Toxicol Chem 9:347-358	Chinook salmon	Oncorhynchus tshawytscha	freshwater	larvae, swim-up	Diet	90 days	Whole body	0.60		1.08		Survival - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	0.60	1.08	0.80
Seleno-DL-methionine	1990	162	Hamilton SJ, Buhl KJ, Faerber NL, Wiedmeyer RH, Bullard FA	Environ Toxicol Chem 9:347-358	Chinook salmon	Oncorhynchus tshawytscha	freshwater	larvae, swim-up	Diet	90 days	Whole body	1.08		2.08		Growth - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	1.08	2.08	1.50
Seleno-DL-methionine	1990	162	Hamilton SJ, Buhl KJ, Faerber NL, Wiedmeyer RH, Bullard FA	Environ Toxicol Chem 9:347-358	Chinook salmon	Oncorhynchus tshawytscha	freshwater	fingerling	Diet	120 days	Whole body	2.52		4.8		Growth - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	2.52	4.8	3.48
Duplicate, No Dose Response, Multiple Chemicals, or Inadequate Information																				
Selenium	1986	JA29	Bertram, P.E. and A.S. Brooks.	Wat. Res. 20(7):877-884.	Fathead minnow	Pimephales promelas	--	adult												

Analyte	Year	Reference	Author	Publication Source	Species Common Name	Species Scientific Name	Species - Water Type	Life Stage	Exposure Route	Exposure Duration	Tissue Type	NOER (ug/g)	NOER note	LOER (ug/g)	LOER note	Effect (Growth, Survival or Reproduction)	Other Notes
Tri-n-butyltin chloride	1991	308	Moore DW, Dillon TM, Suedel BC	Aquat Toxicol 21:181-198	Worm	Neanthes arenaceoedentata	saltwater	juvenile-adult	Diet	70 days	Whole body	1.3		3.4		Survival - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor [430].Organisms exposed to TBT in a food slurry.
Tri-n-butyltin chloride	1991	308	Moore DW, Dillon TM, Suedel BC	Aquat Toxicol 21:181-198	Worm	Neanthes arenaceoedentata	saltwater	juvenile-adult	Diet	70 days	Whole body	0.60		1.3		Growth, reproduction - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor [430].Organisms exposed to TBT in a food slurry.
Tributyltin	1995	398	Schulte-Oehlmann U, Bettin C, Fioroni P, Oehlmann J, Stroben E	Ecotoxicol 4:372-384	Rams horn snail	Marisa cornuarietis	freshwater	adult, female	Water	180 days	Whole body	0.16		0.32-0.36		Females sterilized by imposex	NOER and LOER converted from dry weight to wet weight using 0.2 factor [430].Organisms exposed to TBT in a food slurry.
Multiple contaminants evaluated or non tri-n-butyltin compound																	
Antifouling paint	1988	148	Gibbs PE, Pascoe PL, Burt GR	J Mar Biol Assoc UK 68:715-731	Dog-whelk	Nucella lapillus	saltwater	embryo-adult, female	Water	730 days	Whole body	0.08		0.18		Females sterilized by imposex	NOER and LOER converted from dry weight to wet weight using factor given in paper.
Antifouling paint	1986	449	Thain JE	Mar Environ Res 12:285-309	Mussel	Mytilus edulis	saltwater	spat (young)	Water	45 days	Wet tissue	0.56		2.20		Growth - reduced	
Antifouling paint	1986	449	Thain JE	Mar Environ Res 12:285-309	Oyster	Crassostrea gigas	saltwater	spat (young)	Water	45 days	Wet tissue	0.63		2.38		Growth - reduced	
Antifouling paint	1986	449	Thain JE	Mar Environ Res 12:285-309	Oyster	Crassostrea gigas	saltwater	adult	Water	75 days	Meat	0.4		1.23		Growth - reduced	
Antifouling paint	1986	449	Thain JE	Mar Environ Res 12:285-309	Oyster	Crassostrea gigas	saltwater	adult	Water	75 days	Meat	0.19		0.4		Reproduction - reduced	
Antifouling paint	1986	449	Thain JE	Mar Environ Res 12:285-309	Clam	Venerupis decussata	saltwater	spat (young)	Water	45 days	Wet tissue	1.48		2.64		Growth - reduced	
Tri-n-hexyltin chloride	1996,			Bull Environ Contam Toxicol 57: 146-154; Dissertation - in Fate and effects of triorganotins in the aqueous environment. Utrecht, Netherlands: University of Utrecht. P 43-71													
	1993	441, 443	Tas JW, Keizer A, Opperhuizen A; Tas JW, Seinen W, Opperhuizen A	Tas JW, Keizer A, Opperhuizen A; Tas JW, Seinen W, Opperhuizen A	Guppy	Poecilia reticulata	freshwater	adult, male	Water	0.15 to 11	Whole body	1.1-1.8		0.52		Survival - reduced - death	

Analyte	Year	Reference	Author	Publication Source	Species Common Name	Species Scientific Name	Species - Water Type	Life Stage	Exposure Route	Exposure Duration	Tissue Type	NOER (ug/g)	NOER note	LOER (ug/g)	LOER note	Effect (Growth, Survival or Reproduction)	Other Notes	TEF	NOER used	LOER used	Geometric Mean
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)	1994	473	Walker MK, Peterson RE	Environ Toxicol Chem 13:817-820	Brook trout	Salvelinus fontinalis	freshwater	egg-sac fry	Water	2 days in contaminated water, 78 days in clean water	Whole body (eg)	0.135		0.185		Survival (sac fry) - reduced	Radiotracer study. Also have reduced - 50% (0.233) and reduced - death (0.337-0.470)	1	0.135	0.185	0.1580
2,3,7,8-TCDD	1994	URS212	Tietge, J.E.	Society of Environmental Toxicology and Chemistry 15th Annual Meeting Abstract	Brook trout	Salvelinus fontinalis	--	Immature	Ingestion	--	Whole body	0.0006		0.0012		Reproduction	Significant Delay In Spawning; TCDD-spiked Diet To Produce Desired Body Burden; Abstract With Minimal Information	1	0.0006	0.0012	0.0008
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)	1979	304	Miller, R.A., L.A. Norris and B.R. Loper	Trans. Amer. Fish. Soc. 108:401-407.	Coho salmon	Oncorhynchus kisutch	freshwater	young	Water	4 days in contaminated water, 114 in clean water	Whole body	0.125		2.2		Survival, growth - reduced		1	0.125	2.2	0.5244
2,3,7,8-TCDD	1979	URS1999	Miller, R.A., L.A. Norris and B.R. Loper	Trans. Amer. Fish. Soc. 108:401-407.	Coho salmon	Oncorhynchus kisutch	--	Immature	Absorption	--	Whole body	0.000125		0.00217		Growth, Mortality	Residue measured after 114 days in clean water	1	0.0001	0.00217	0.0005
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)	1995	496	Zabel EW, Cook PM, Peterson RE	Environ Toxicol Chem 14:2175-2179	Lake trout	Salvelinus namaycush	freshwater	egg-sac fry	Water	2 days in contaminated water, 78 days in clean water	Whole body (eg)	0.043		0.072		Survival (sac fry) - reduced	Radiotracer study. Also have reduced - 20% death (0.11)	1	0.043	0.072	0.0556
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)	1991	91	Cook PM, Kuehl DW, Walker MK, Peterson RE	Gallo MA et al., editors. Banbury Report 35: Biological basis for risk assessment of dioxins and related compounds. Cold Spring Harbor NY: cold Spring Harbor Laboratory Press. P143-167.	Lake trout	Salvelinus namaycush	freshwater	egg-sac fry	Water	2 days in contaminated water, 37 days in clean water	Whole body (eg)	0.034		0.055		Survival (sac fry) - reduced	Radiotracer study. Also have reduced - 50% (0.065) and hatchability reduced (0.226)	1	0.034	0.055	0.0432
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)	1994	470	Walker MK, PM Cook, AR Batterman, BC Butterworth, C Berini, JJ Libal, LC Hufnagle, RE Peterson	Can J Fish Aquat Sci 51:1410-1419	Lake trout	Salvelinus namaycush	freshwater	egg	Maternal	30 days in clean water	Whole body	0.00015		0.00023		Survival - reduced	Radiotracer study.	1	0.0002	0.00023	0.000186
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)	1994	470	Walker MK, PM Cook, AR Batterman, BC Butterworth, C Berini, JJ Libal, LC Hufnagle, RE Peterson	Can J Fish Aquat Sci 51:1410-1419	Lake trout	Salvelinus namaycush	freshwater	egg-sac fry	Maternal	120 days in clean water	Whole body (eg)	0.000023		0.00005		Survival (sac fry) - reduced	Radiotracer study. Also have reduced - 50% (0.00006) and reduced - death (0.000145)	1	2E-05	0.00005	0.000034
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)	1994	470	Walker MK, PM Cook, AR Batterman, BC Butterworth, C Berini, JJ Libal, LC Hufnagle, RE Peterson	Can J Fish Aquat Sci 51:1410-1419	Lake trout	Salvelinus namaycush	freshwater	egg-sac fry	Water	2 days in contaminated water, 120 days in clean water	Whole body (eg)	0.000034		0.00004		Survival (sac fry) - reduced	Radiotracer study. Also have reduced - 50% (0.00007) an dreduced - death (0.00012)	1	3E-05	0.00004	0.000037
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)	1991	426	Spitsbergen JM, Walker MK, OlsonJR, Peterson RE	Aquat Toxicol 19:41-71	Lake trout	Salvelinus namaycush	freshwater	egg-sac fry-fry	Water	2 days in contaminated water, 125 days in clean water	Whole body (eg)<0.000015		0.00004		Survival (sac fry) - reduced	Radiotracer study. Also have recuded - death (0.0004)	1	2E-05	0.00004	0.000024	
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)	1992, 1991	471, 474	Walker MK, Hufnagle Jr LC, Clayton MK, Peterson RE; Walker MK, Spitsbergen JM, Olson JR, Peterson RE	Aquat Toxicol 22:15-38; Can J Fish Aquat Sci 48:875-883	Lake trout	Salvelinus namaycush	freshwater	egg-sac fry-fry	Water	2 days in contaminated water, 120 days in clean water	Whole body (eg)	0.000034		0.000055		Survival (sac fry) - reduced	Radiotracer study	1	3E-05	0.000055	0.000043
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)	1991	474	Walker MK, Spitsbergen JM, Olson JR, Peterson RE	Can J Fish Aquat Sci 48:875-883	Lake trout	Salvelinus namaycush	freshwater	egg-sac fry-fry	Water	2 days in contaminated water, 174 days in clean water	Whole body (eg)	0.000034		0.000055		Survival, growth - reduced	Radiotracer study. Also have survival (sac fry) - reduced 50% (0.000065)	1	3E-05	0.000055	0.000043
2,3,7,8-TCDD	1991	JA474	Walker MK, JM Spitsbergen, JR Olson, RE Peterson	Can. J. Fish. Aquat. Sci.	Lake trout	Salvelinus namaycush	--	Egg	Water	--	Whole body	0.000034		0.000226		Growth	Significant sac fry wet weight increase at LOED TCDD concentration. Significant decrease in sac fry length at LOED TCDD concentration.	1	3E-05	0.000226	0.000088
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)	1977	185	Hawkes, C.L. and L.A. Norris	Trans. Am. Fish. Soc. 106:641-645.	Rainbow trout	Oncorhynchus mykiss	freshwater	Juvenile	Diet	105 days	Whole body	0.0016		1.38		Survival, growth - reduced	Radiotracer study. Also have survival - reduced 45% (0.00098) for test duration 28 days in contaminated water, 28 days in clean water with survival determined at 56 days	1	0.0016	1.38	0.0470
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)	1988	296	Mehrle PM, Buckler DR, Little EE, Smith LM, Petty JD, Peterman PH, Stalling DL, de Graeve GM, Coyle JJ, Adams WJ	Environ Toxicol Chem 7:47-62	Rainbow trout	Oncorhynchus mykiss	freshwater	fry, 0.38g	Water	28 days	Whole body	0.00098	Survival determined at 28 days	0.00452		Survival - reduced 50%		1	0.001	0.00452	0.0021
2,3,7,8-TCDF (2,3,7,8-Tetrachlorodibenzofuran)	1988	296	Mehrle PM, Buckler DR, Little EE, Smith LM, Petty JD, Peterman PH, Stalling DL, de Graeve GM, Coyle JJ, Adams WJ	Environ Toxicol Chem 7:47-62	Rainbow trout	Oncorhynchus mykiss	freshwater	fry, 0.38g	Water	28 days in contaminated water. No effect - also 28 days in clean water	Whole body	0.0025		0.0093-0.0119		Survival, Growth - reduced	Radiotracer study. Same numbers as below!	0.05	0.0001	0.000465	0.0002411
Duplicates																					
2,3,7,8-TCDD	1977	JA185	Hawkes, C.L. and L.A. Norris	Trans. Am. Fish. Soc. 106:641-645.	Rainbow trout	Oncorhynchus mykiss	--	Juvenile	Ingestion	--	Whole body	0.0016		1.38		Growth - weight loss, Mortality increased		--	--	--	--
2,3,7,8-TCDD	1994	JA470	Walker MK, PM Cook, AR Batterman, BC Butterworth, C Berini, JJ Libal, LC Hufnagle, RE Peterson	Can J Fish Aquat Sci 51:1410-1419	Lake trout	Salvelinus namaycush	--	Egg	Ingestion	--	Whole body	0.000034		0.00004		Mortality	Egg groups received one injection out of 7 graded doses of TCDD.	--	--	--	--
2,3,7,8-TCDD	1994	JA470	Walker MK, PM Cook, AR Batterman, BC Butterworth, C Berini, JJ Libal, LC Hufnagle, RE Peterson	Can J Fish Aquat Sci 51:1410-1419	Lake trout	Salvelinus namaycush	--	Egg	Ingestion	--	Whole body	0.000023		0.00005		Mortality	TCDD exposure resulted from feeding adult female trout for up to 149d prior to spawning. No significant differences were found between exp. dose and egg bioaccumulation.	--	--	--	--
2,3,7,8-TCDD	1991	JA474	Walker MK, JM Spitsbergen, JR Olson, RE Peterson	Can. J. Fish. Aquat. Sci.	Lake trout	Salvelinus namaycush	--	Egg	Water	--	Whole body	0.000034		0.000055		Mortality	Significant increase in mortality at LOED concentration - the lowest concentration to do so. (Called LOAEL in the paper.)	--	--	--	--
2,3,7,8-TCDD	1994	JA470	Walker MK, PM Cook, AR Batterman, BC Butterworth, C Berini, JJ Libal, LC Hufnagle, RE Peterson	Can J Fish Aquat Sci 51:1410-1419	Lake trout	Salvelinus namaycush	--	Egg	Ingestion	--	Whole body	0.000044		0.000055		Mortality	Eggs were treated with waterborne TCDD. Radiotracer study.	--	--	--	--

Note:
Pink highlight = lowest LOER; these values were used in the species sensitivity distribution.

Analyte	Year	Reference	Author	Publication Source	Species Common Name	Species Scientific Name	Species - Water Type	Life Stage	Exposure Route	Exposure Duration	Tissue Type	NOER (ug/g)	NOER note	LOER (ug/g)	LOER note	Effect (Growth, Survival or Reproduction)	Other Notes
Fluoranthene	1998	MEC03-356	Lotufo, G.R.	Aquat Toxicol 44:17-30	copepod	Coullana sp	--	adult	Combined	--	Whole body	121.4		262.9		Mortality, Reproduction	Mature, non-ovigerous females used at start of test and survivors for measurement of body burden.
Fluoranthene	1998	MEC03-356	Lotufo, G.R.	Aquat Toxicol 44:17-30	copepod	Schizopera knabeni	--	adult	Combined	--	Whole body	40.25		121.35		Reproduction	Mature, non-ovigerous females used at start of test and survivors for measurement of body burden.
Fluoranthene	1998	MEC03-356	Lotufo, G.R.	Aquat Toxicol 44:17-30	copepod	Schizopera knabeni	--	adult	Combined	--	Whole body	586.6		788.8		Survival	Mature, non-ovigerous females used at start of test and survivors for measurement of body burden.
Fluoranthene	1997	MEC04-071	Driscoll SK, GA Harkey, PF Landrum	Environ Tox & Chem 16(4):742-753	Amphipod	Diporeia spp.	--	adult	absorption	--	Whole body	--		252.8		Mortality	
Fluoranthene	1997	MEC04-071	Driscoll SK, GA Harkey, PF Landrum	Environ Tox & Chem 16(4):742-753	Amphipod	Diporeia spp.	--	adult	absorption	--	Whole body	--		71.8		Mortality	
Fluoranthene	1995	URS75	Eertman, R.H.M., C.L. Groenink, B. Sandee and H. Hummel	Mar. Environ. Res. 39:169-173.	Mussel	Mytilus edulis	--	NA	absorption	--	Whole body	--		0.22		Reproduction	Abnormal gametogenesis
Multiple variables (UV-A exposure)																	
Fluoranthene	1995	13	Ankley, GT, Erickson, RJ, Phipps GL, Mattson VR, Kosian PA, Sheedy BR, Cox JS	Environ Sci Technol 29:2828-2833	Worm	Lumbriculus variegatus	freshwater	adult	Water	4 dark, 4 light in clean water	Whole body	12.5		25		Survival - reduced 98%	UV-A exposure of 75.2 uW/cm2
Fluoranthene	1995	13	Ankley, GT, Erickson, RJ, Phipps GL, Mattson VR, Kosian PA, Sheedy BR, Cox JS	Environ Sci Technol 29:2828-2833	Worm	Lumbriculus variegatus	freshwater	adult	Water	4 dark, 4 light in clean water	Whole body	25		41		Survival - reduced 32%	UV-A exposure of 33.5 uW/cm2
Fluoranthene	1995	13	Ankley, GT, Erickson, RJ, Phipps GL, Mattson VR, Kosian PA, Sheedy BR, Cox JS	Environ Sci Technol 29:2828-2833	Worm	Lumbriculus variegatus	freshwater	adult	Water	4 dark, 4 light in clean water	Whole body	84		131		Survival - reduced 52%	UV-A exposure of 16.6 uW/cm2

Analyte	Year	Reference	Author	Publication Source	Species Common Name	Species Scientific Name	Species - Water Type	Life Stage	Exposure Route	Exposure Duration	Tissue Type	NOER (ug/g)	NOER note	LOER (ug/g)	LOER note	Effect (Growth, Survival or Reproduction)	Other Notes
Hexachlorobenzene	1975	SEQ97-3	Parrish, P.R., G.H. Cook, and J.M. Patrick	Proceedings 28th Annual Conference Southeastern Association of Game and Fish Commissioners. 1975, pp. 179-186. Contribution No. 226	Shrimp - Pink	<i>Penaeus duorarum</i>	--	Adult	Combined	--	Whole Body	4.1		13		Mortality	Estimated NOED and LOED - No Statistical Summary In Text
Hexachlorobenzene	1975	SEQ97-3	Parrish, P.R., G.H. Cook, and J.M. Patrick	Proceedings 28th Annual Conference Southeastern Association of Game and Fish Commissioners. 1975, pp. 179-186. Contribution No. 226	Shrimp - Grass	<i>Palaeomonetes pugio</i>	--	Adult	Combined	--	Whole Body	10		27		Mortality	Estimated NOED and LOED - No Statistical Summary In Text
Hexachlorobenzene	1995	JA20	Baturo, W., L. Lagadic, and T. Caquet	Environmental Toxicology and Chemistry, Vol. 14, No. 3, pp. 503-511.	Snail - Freshwater	<i>Lymnaea palustris</i>	--	Adult	Combined	--	Whole Body	--		0.063		Reproduction	Significant increase in egg production. Mesocosm study. Residue measured at 21 days.
Hexachlorobenzene	1991	URS211	Thuren, A., Woin, P.	Bull. Environ. Contam. Toxicol. 46: 159-166	Snail - Freshwater	<i>Lymnaea palustris</i>	--	Adult	Combined	--	Whole Body	--		0.063		Growth	Significant decrease in shell length. Mesocosm study. Residue measured at 21 days.

Analyte	Year	Reference	Author	Publication Source	Species Common Name	Species Scientific Name	Species - Water Type	Life Stage	Exposure Route	Exposure Duration	Tissue Type	NOER (ug/g)	NOER note	LOER (ug/g)	LOER note	Effect (Growth, Survival or Reproduction)	Other Notes	NOER used	LOER used	Geometric Mean	
Mercuric acetate	1973	100	Cunningham PA, Tripp MR	Mar Biol 20:14-19	Oyster	<i>Crassostrea virginica</i>	saltwater	adult	Water	60 days in contaminated water, 32 days in clean water	Soft parts	28.0		140.7		Survival - reduced 65%	Lab conditions were flow-through for 12h (daytime), static with Hg added for 12h (nighttime)	28.0	140.7	62.77	
Mercuric chloride	1984	448	Thain JE	Mar Environ Res 12:285-309	Slipper limpet	<i>Crepidula fornicate</i>	saltwater	adult	Water	112 days	Whole body	4.8		10-17		Reproduction (fecundity) - reduced		8	10	8.94	
Mercury	1984	URS208	Thain JE	Mar Environ Res 12:285-309	Slipper limpet	<i>Crepidula fornicate</i>	--	adult	Combined	--	Whole body	8		16		Reproduction	Significant effect on fecundity (number of larva released). Algal food source contaminated with mercury.	8	16	11.31	
Mercuric chloride	1984	448	Biesinger, K.E., L.E. Anderson and J.G. Eaton	Arch. Environ. Contam. Toxicol. 11:769-774	Slipper limpet	<i>Crepidula fornicate</i>	saltwater	adult	Water	112 days	Whole body	10-17		22-48		Growth - reduced		17	22	19.34	
Mercuric chloride	1982	32	Biesinger, K.E., L.E. Anderson and J.G. Eaton	Arch. Environ. Contam. Toxicol. 11:769-774	Cladoceran	<i>Daphnia magna</i>	freshwater	<=24h-adult	Water	21 days	Whole body	3.05		4.66		Reproduction - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).	3.05	4.66	3.77	
Mercury	1982	URS26	Eaton	Arch. Environ. Contam. Toxicol. 11:769-774	Water flea	<i>Daphnia magna</i>	--	Immature	Absorption	21 days	Whole body	0.859		2.33		Reproduction	Reduction in number of neonates produced in 21 days.	0.859	2.33	1.41	
Mercury	1975	JA488	Wobeser, G.	J. Fish. Res. Bd. Can. 32(11):2005-2013.	Rainbow Trout	<i>Oncorhynchus mykiss</i>	--	Immature	Absorption	--	Carcass	1		3		Mortality - Increased		1	3	1.73	
Mercuric chloride	1975	188	Heisinger JF, Green W	Bull Environ Contam Toxicol 14:665-673	Japanese medaka	<i>Oryzias latipes</i>	freshwater	embryo	Water	16 days	Whole body	16		29-56		Survival - reduced 80-100%	100% mortality at 56 ug/g	16	29	21.54	
Mercuric chloride	1982	412	Snarski, V.M., Olson, G.F.	Aquat Toxicol 2:143-156	Fathead minnow	<i>Pimephales promelas</i>	freshwater	larvae-adult	Water	60 days	Whole body	2.75		4.18		Survival - reduced	Fish were fed dry trout starter	2.75	4.18	3.39	
Mercuric chloride	1982	412	Snarski, V.M., Olson, G.F.	Aquat Toxicol 2:143-156	Fathead minnow	<i>Pimephales promelas</i>	freshwater	larvae-adult	Water	60 days	Whole body	0.80		1.31		Growth - reduced	Fish were fed dry trout starter	0.80	1.31	1.02	
Mercuric chloride	1982	412	Snarski, V.M., Olson, G.F.	Aquat Toxicol 2:143-156	Fathead minnow	<i>Pimephales promelas</i>	freshwater	larvae-adult	Water	60 days	Whole body	2.64		4.76		Growth - reduced	Fish were fed brine shrimp	2.64	4.76	3.54	
Mercuric chloride	1982	412	Snarski, V.M., Olson, G.F.	Aquat Toxicol 2:143-156	Fathead minnow	<i>Pimephales promelas</i>	freshwater	larvae-adult	Water	287 days	Whole body	2.84		4.47		Reproduction - reduced 100%	Fish were fed brine shrimp	2.84	4.47	3.56	
Mercury	1982	SEQ97-31	Snarski, V.M., Olson, G.F.	Aquat Toxicol 2:143-156	Fathead minnow	<i>Pimephales promelas</i>	--	Adult	Combined	30 days	Whole body	0.32		1.36		Growth	Progeny of exposed fish and weight of females	0.32	1.36	0.66	
Mercury	1982	SEQ97-31	Snarski, V.M., Olson, G.F.	Aquat Toxicol	Fathead minnow	<i>Pimephales promelas</i>	--	Adult	Combined	--	Whole body	9.41		18.8		Growth	Weight of males	9.41	18.8	13.30	
Mercury	1982	SEQ97-31	Snarski, V.M., Olson, G.F.	Aquat Toxicol	Fathead minnow	<i>Pimephales promelas</i>	--	Adult	Combined	--	Whole body	2.75		4.18		Mortality		2.75	4.18	3.39	
Mercury	1996	URS21	Friedmann, A.S., M.C. Watzin, T. Brinck-Johnsen and J.C. Leiter	Aquat Toxicol. 35:265-278.	Walleye	<i>Stizostedion vitreum</i>	--	Immature	Ingestion	--	Whole body	0.25		2.37		Growth	Significant reduction in length and weight of males, but not females	0.25	2.37	0.77	
Methylmercury																	Second generation fish		3.4	9.4	5.65
Methylmercuric chloride		290			Brook trout	<i>Salvelinus fontinalis</i>	freshwater	embryo-adult	Adult fish + water	756 days	Whole body	3.4		9.4		Survival, Growth, Reproduction -	NOER is slightly higher than LOER. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).				
Mercuric chloride	1979	189	Heisinger JF, Hansen CD, Kim JH	Arch Environ Contam Toxicol 7:159-168	Goldfish	<i>Carassius auratus</i>	freshwater	4.5-6.5cm	Water	2 days	Whole body	6.1		5.6		Residues in surviving fish	Survival - reduced 80%	6.1	5.6	5.84	

Note:
Pink highlight = lowest LOER; these values were used in the species sensitivity distribution.

4.4-DDT - SETAC AND ERED DATABASES

Analyte	Year	Reference	Author	Publication Source	Species Common Name	Species Scientific Name	Species - Water Type	Life Stage	Exposure Route	Exposure Duration	Tissue Type	NOER (ug/g)	NOER note	LOER (ug/g)	LOER note	Effect (Growth, Survival or Reproduction)	Other Notes	NOER used	LOER used	Geometric Mean
DDT	2001	MEC03-062	Lotufo, G.R., J.D. Farrar, B.M. Duke, T.S. Bridges	Arch Environ Contam Toxicol 41: 142-150	Amphipod	<i>Leptocheirus plumulosus</i>	--	Juvenile	Absorption	--	Whole body	2.12		47.9		Mortality	Residues taken only fro live animals	2.12	47.9	10.08
DDT	1975	JA254	Leffler, C.W.	Environ Pollut 8:283-300	Blue Crab	<i>Callinectes sapidus</i>	--	Juvenile	Ingestion	--	Whole body	0.13	Four weekly feedings of 0.53 µg DDT in diet	1	Three weekly feedings of 3.2 µg in diet	Mortality - increased	Residue = DDT and metabolites.	0.13	1	0.36
DDT	1968	JA265	Macek, K.J.	Journal Fisheries Research Board Canada, Vol. 25, No. 9, pp. 1787-1796.	Brook trout	<i>Salvelinus fontinalis</i>	--	1-yr old	Ingestion	--	Whole body	7.6	No significant differences in weight gain	7.6	Males significantly longer than females	Growth - Length and Weight	DDT exposure in diet of 2 mg/kg/week. Assume wet weight for residues. Residues includes DDT and metabolites.	7.6	7.6	7.60
DDT	1968	JA265	Macek, K.J.	Journal Fisheries Research Board Canada, Vol. 25, No. 9, pp. 1787-1796.	Brook trout	<i>Salvelinus fontinalis</i>	--	Larval	Ingestion	--	Whole body	0.26	Male parent only exposed to 2 mg DDT/kg/week in diet	7.6	Female parent only exposed to 2 mg DDT/kg/week in diet	Mortality - increase (fry to 15 weeks post hatch)	Assume wet weight for residues. Residues includes DDT and metabolites.	0.26	7.6	1.41
p,p'-DDT	1969	62	Buhler DR, ME Rasmussen, WE Shanks	Toxicol. Appl. Pharmacol. 14: 535-555	Chinook salmon	<i>Oncorhynchus tshawytscha</i>	freshwater	fingerling, 1.1g	Diet	40 days	Whole body	11.4		12.1-16.9		Survival - reduced 94%	Residues = DDT + metabolites	11.4	12.1	11.74
p,p'-DDT	1969	62	Buhler DR, ME Rasmussen, WE Shanks	Toxicol. Appl. Pharmacol. 14: 535-555	Chinook salmon	<i>Oncorhynchus tshawytscha</i>	freshwater	fingerling, 1.1g	Diet	5 days contaminated water, 35 days clean water	Whole body	2.2		11.6		Survival - reduced 53%	Residues = DDT + metabolites	2.2	11.6	5.05
DDT	1969	JA62	Buhler DR, ME Rasmussen, WE Shanks	Toxicol. Appl. Pharmacol. 14: 535-555	Chinook salmon	<i>Oncorhynchus tshawytscha</i>	--	Juvenile	Ingestion	--	Whole body	2.2	6 days depuration	12.3	105 days depuration	Mortality		2.2	12.3	5.20
Technical DDT	1969	62	Buhler DR, ME Rasmussen, WE Shanks	Toxicol. Appl. Pharmacol. 14: 535-555	Coho salmon	<i>Oncorhynchus kisutch</i>	freshwater	fingerling, 3.7g	Diet	60 days	Whole body	16.6		113.0		Survival - reduced 85%	Residues = DDT + metabolites	16.6	113.0	43.31
DDT	1969	226	Johnson HE, Pecor C	Thirty-fourth North American Wildlife Conference: proceedings; Mar 2-5, Washington DC, p159-166	Coho salmon	<i>Oncorhynchus kisutch</i>	freshwater	embryo-fry	Adult fish (water)	1 day contaminated water, 56 days clean water	Whole body (embryo)	0.55-0.66		1.09-2.76		Survival - reduced		0.66	1.09	0.85
DDT	1976	JA218	Cuerrier JP, Keith JA, Stone E	U.S. EPA Office of Research and Development, Report EPA-600/3-76-114.	Fathead minnow	<i>Pimephales promelas</i>	--	embryo	water	266 days	Whole body	6.7	0.35 µg/L	24	1.53 µg/L	Mortality - decreased hatchability	Residue = DDT and metabolites.	6.7	24	12.68
DDT	1977	JA219	Jarvinen, A.W., M.J. Hoffman, and T.W. Thorslund	J Fish Res Bd Can 34:2089-2103	Fathead minnow	<i>Pimephales promelas</i>	--	adult	water (LOED), water/ingestion (NOED)	??	Whole body	19	F + 0.5W hatchability F= 45.6 µg/g fish initial age is 45d	24	2.0W hatchability fish initial age is 45d	Reproduction - hatchability		19	24	21.35
DDT	1976, 1977	218, 219	Cuerrier JP, Keith JA, Stone E; Jarvinen, A.W., M.J. Hoffman, and T.W. Thorslund	U.S. EPA Office of Research and Development, Report EPA-600/3-76-114; J Fish Res Bd Can 34:2089-2103	Fathead minnow	<i>Pimephales promelas</i>	freshwater	juvenile-adult	Diet or water or diet/water combo	266 days	Whole body	40	exposure route = water	57	exposure route = diet	Survival - reduced 25%	Residues = DDT + metabolites	40	57	47.75
DDT	1964	JA64	Burdick GE, EJ Harris, HJ Dean, TM Walker, J Skea, D Colby	Trans. Am. Fish. Soc. 93:127-136	Lake trout	<i>Salvelinus namaycush</i>	--	Egg	Combined	--	Whole body	2.67		2.95		Mortality		2.67	2.95	2.81
DDT	1967	99	Cuerrier JP, Keith JA, Stone E	Naturaliste Can 94:315-320	Rainbow trout	<i>Oncorhynchus mykiss</i>	freshwater	"sac fry-fingerling" for red. survival; "egg-fingerling" for no effect survival	Maternal	90 days	Whole body	0.064-0.178		1.14-1.42		Survival - reduced 90%	Residues = DDT + metabolites	0.178	1.14	0.45
DDT	1969	211	Hopkins CL, Solly SRB, Ritchie AR	NZ J Mar Freshwater Res 3:220-229	Rainbow trout	<i>Oncorhynchus mykiss</i>	freshwater	egg-fry	Maternal: ovary	-60 days	Whole body (fry)	0.15-0.30		1.27		Survival - reduced (egg)	Residues = DDT + metabolites	0.3	1.27	0.62
DDT	1973	411	Smith RM, Cole CF	J Fish Res Bd Can 30:1894-1898	Winter flounder	<i>Pseudopleuronectes americanus</i>	saltwater	embryo	Adult fish (water)	9-12 days in clean water	Whole body	1.55		2.49-3.77		Survival - reduced 91%-99%	Residues = DDT+DDE	1.55	2.49	1.96

Note:
Pink highlight = lowest LOER; these values were used in the species sensitivity distribution.

SETAC database	Reference	Common Name	Species	Water Type	Life Stage	Exposure Route	Exposure Duration	Tissue Type	NOER (ug/g)	NOER note	LOER (ug/g)	LOER note	Effect (Growth, Survival or Reproduction)	Other Notes
Individual Chemicals														
Arsenic (Table 11)														
Arsenic trioxide	87	Rainbow trout	<i>oncorhynchus mykiss</i>	freshwater	juvenile	Diet	56 days	Carcass	8.8		17.9		Survival - reduced >20%	
Arsenic trioxide	87	Rainbow trout	<i>oncorhynchus mykiss</i>	freshwater	juvenile	Diet	56 days	Carcass	0.9 control		3.1		Growth - reduced	
Disodium arsenate, heptahydrate	87	Rainbow trout	<i>oncorhynchus mykiss</i>	freshwater	juvenile	Diet	56 days	Carcass	9.1		11.2		Survival - reduced >20%	
Disodium arsenate, heptahydrate	87	Rainbow trout	<i>oncorhynchus mykiss</i>	freshwater	juvenile	Diet	56 days	Carcass	0.9 control		6.9		Growth - reduced	
Sodium arsenite	286	Rainbow trout	<i>oncorhynchus mykiss</i>	freshwater	fingerling	Water	77 days	Whole body	2.0 5deg C, resid.		3.0 5deg C		Survival - reduced 50%	Also have survival reduced (death) - residues in dead fish - 5.4; and survival - no effect - 1.0 (no note); 15deg C survival no effect - 2-3.4
Sodium arsenite	286	Rainbow trout	<i>oncorhynchus mykiss</i>	freshwater	fingerling	Water	77 days	Whole body	1.0 5deg C		3.0 5deg C		Growth - reduced	Also have growth - no effect at 15deg C - 2-3.4
Cadmium (Table 5)														
Cadmium	224	Worm	<i>Neanthes arenaceoedentata</i>	saltwater	adult	Water	21 days	Whole body	1.12		16.86		Growth - reduced	Radiotracer study.
Cadmium	223	Worm	<i>Neanthes arenaceoedentata</i>	saltwater	adult	Water	77 days	Whole body	4.50		61.82		Reproduction - reduced	Radiotracer study.
Cadmium chloride	77	Oligochaete	<i>Lumbriculus variegatus</i>	freshwater	adult	Water	10 days	Whole body	60		134 Residues in Survival - reduced 40%			NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430)
Cadmium chloride	77	Snail	<i>Hellsoma sp.</i>	freshwater	adult	Water	10 days	Whole body	90		125 Residues in Survival - reduced 50%			NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430)
Cadmium chloride	419	Snail	<i>Physa integra</i>	freshwater	6-15mm	Water	28 days	Whole body	10		30		Survival - reduced >=80%	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430)
Cadmium chloride	479	Sydney rock oyster	<i>Saccostrea commercialis</i>	saltwater	adult	Water	112 days	Whole body	25		85		Survival - reduced 100% in 28d NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430)	
Cadmium	222	Brine shrimp	<i>Artemia salina</i>	saltwater	Nauplii	Water	7 days	Whole body	0.36		5.4-7.5		Growth - reduced	
Cadmium nitrate	135	Cladoceran	<i>Daphnia magna</i>	freshwater	24h	Diet	20 days	Whole body	6.4		8.8		Survival - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430)
Cadmium nitrate	135	Cladoceran	<i>Daphnia magna</i>	freshwater	24h	Diet	20 days	Whole body	0.27		6.4		Reproduction - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430)
Cadmium chloride	180	Cladoceran	<i>Daphnia magna</i>	freshwater	12h	Diet	8 days	Whole body	7-10		9-20		Survival, Growth, Reproduction	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430)
Cadmium chloride	79	Mysid	<i>Mysidopsis bahia</i>	saltwater	adult	Water	33 days	Whole body	0.08		1.3		Growth - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430)
Cadmium chloride	79	Mysid	<i>Mysidopsis bahia</i>	saltwater	adult	Water	33 days	Whole body	1.3		2.4		Survival - reduced 50%	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430)
Cadmium chloride	79	Mysid	<i>Mysidopsis bahia</i>	saltwater	adult	Water	33 days	Whole body	2.4		4.4		Reproduction - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430)
Cadmium chloride hydrate	2	Amphipod	<i>Gammarus fossarum</i>	freshwater	adult	Water	14 days	Whole body	53.4		101.6		Survival - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430); Hard water, 83-87 mg/L; animals not fed
Cadmium chloride	435	Amphipod	<i>Pontoporeia affinis</i>	saltwater	adult, female	Water	105 days	Whole body	6.0		11.4		Survival - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430). "One adult female that survived 265 had a body burden of 30 ug/g."
Cadmium chloride	435	Amphipod	<i>Pontoporeia affinis</i>	saltwater	juvenile	Water	265 days	Whole body	2.3		15.6		Survival - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium	39	Amphipod	<i>Hyalella azteca</i>	freshwater	young	Water	42 days	Whole body	4.6		6.0		Survival - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium chloride	39	Amphipod	<i>Hyalella azteca</i>	freshwater	young	Water	42 days	Whole body	6.4		7.8		Survival - reduced	Humic acid added. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium chloride	39	Amphipod	<i>Hyalella azteca</i>	freshwater	young	Water	42 days	Whole body	4.6		7.8		Survival - reduced	EDTA added. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium chloride	39	Amphipod	<i>Hyalella azteca</i>	freshwater	young	Water	42 days	Whole body	2.6		5.6		Survival - reduced	8-hydroxyquinaline (8 HO) added. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium chloride	39	Amphipod	<i>Hyalella azteca</i>	freshwater	young	Water	42 days	Whole body	8.4		15.2		Survival - reduced	90% distilled water added. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium chloride	39	Amphipod	<i>Hyalella azteca</i>	freshwater	young	Water	28 days	Whole body	9.4		17.2		Survival - reduced 50%	Sediment A added. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium chloride	452	Crayfish	<i>Cambarus latimanus</i>	freshwater	adult	Water	150 days	Whole body	14.9		21.96		Survival - reduced	Sediment B added. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium chloride	306	Crayfish	<i>Oncorhynchus virilis</i>	freshwater	adult	Water	14 days	Whole body	0.9		5.7		Survival - reduced 25%	Test site = "Outdoors, Flow-through"; "Organisms tested ambient winter temperatures."
Cadmium chloride	364	Midge	<i>Chironomus riparius</i>	freshwater	larvae	Water	28-56 days	Whole body	5.6		7.6		Survival - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium chloride	365	Midge	<i>Chironomus riparius</i>	freshwater	larvae-adult	Water	180 days	Whole body	17.8	No effects on	33	Survival rec	Survival, reproduction - reduced	Also have first generation survival reduced, reproduction reduced by the third generation (66 ug/g). NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium chloride	485	Baltic herring	<i>Clupea harengus</i>	saltwater	embryo	Water	15 days	Whole body	19-38		36-77		Survival - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium chloride	485	Baltic herring	<i>Clupea harengus</i>	saltwater	embryo	Water	15 days	Whole body	7		24		Survival (viable hatch) - reduced	Salinity 5ppt. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium chloride	485	Baltic herring	<i>Clupea harengus</i>	saltwater	embryo	Water	15 days	Whole body	11		19		Survival (viable hatch) - reduced	Salinity 16ppt. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium chloride	485	Baltic herring	<i>Clupea harengus</i>	saltwater	embryo	Water	15 days	Whole body	29		38-52		Survival (viable hatch) - reduced	Salinity 25 and 30 ppt. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium	248	Rainbow trout	<i>Oncorhynchus mykiss</i>	freshwater	3.1g	Water	210 days	Whole body	0.54		0.96		Growth - reduced	
Cadmium	248	Rainbow trout	<i>Oncorhynchus mykiss</i>	freshwater	Embryo-Adult	Water	84 days	Whole body	0.47		1.6		Growth - reduced	
Cadmium chloride	379	Atlantic salmon	<i>Salmo salar</i>	freshwater	Embryo-Alevin	Water	158 days	Whole body (embryo)	2.0		4.0		Survival - reduced	5 deg C. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium chloride	379	Atlantic salmon	<i>Salmo salar</i>	freshwater	Embryo-Alevin	Water	158 days	Whole body (embryo)	0.3		0.4		Growth - reduced	5 deg C. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium chloride	379	Atlantic salmon	<i>Salmo salar</i>	freshwater	Embryo-Alevin	Water	92 days	Whole body (embryo)	0.25		0.56		Survival - reduced	9.6 deg C. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium chloride	379	Atlantic salmon	<i>Salmo salar</i>	freshwater	Embryo-Alevin	Water	92 days	Whole body (alevin)	0.06		0.12		Growth - reduced	9.6 deg C. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium chloride	26	Brook trout	<i>Salvelinus fontinalis</i>	freshwater	Embryo-Juvenile	Adult fish + water	84 days	Whole body	0.13		0.25		Growth - reduced	Third generation fish. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430). Residues were higher at 30 than 100d. Ranges shown are for 100 and 30 d. NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium chloride	418	Flagfish	<i>Jordanella floridae</i>	freshwater	Embryo-Adult	Water	100 days	Whole body	4-15.6		2-8		Survival, Growth - reduced	Survival, Growth - reduced
Cadmium chloride	418	Flagfish	<i>Jordanella floridae</i>	freshwater	Embryo-Adult	Water	100 days	Whole body	2-8		12.5		Mean spaw	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium chloride	181	Guppy	<i>Poecilia reticulata</i>	freshwater	19 d	Diet	30 days	Whole body	0.8		0.8-1.2		Reproduction - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium chloride	405	Seabass	<i>Lates calcarifer</i>	saltwater	Larvae-Juvenile	Water	16 days	Whole body	2.5		4.2	Residues in Survival - reduced 10%	Lab conditions were flow-through for 12h (daytime), static with Hg added for 12h (nighttime)	
Cadmium chloride	482	Flounder	<i>Pleuronectes flesus</i>	saltwater	Embryo-Larvae	Water	17 days	Whole body (egg)	2-6		4-18		Survival - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430).
Cadmium	321	Northwestern												

Pyrene	SETAC database	Reference	Common Name	Species	Water Type	Life Stage	Exposure Route	Exposure Duration	Tissue Type	NOER (ug/g)	NOER note	LOER (ug/g)	LOER note	Effect (Growth, Survival or Reproduction)	Other Notes
Chlordane		247	Worm	Lumbriculus variegatus	freshwater	adult	Sediment	7 days	Whole body	380		465		Survival - reduced 17%	Radiotracer study
No RECORDS FOUND															
Hexachlorobenzene															
No records with both NOER and LOER that meet criteria															
Pentachlorophenol															
Pentachlorophenol		239	Goldfish	Carassius auratus	freshwater	1.3g	Water	0.2 days	Whole body	<80	pH 5.5-9, resic 82-115	pH 5.5-9, re	Survival - reduced - death		Also have survival - no effect for pH 10 - 20
Pentachlorophenol		234	Goldfish	Carassius auratus	freshwater	1.3g	Water	0.2 days	Whole body	18-82	pH 5.5-10, res 82-115	pH 5.5-10, r	Survival - reduced - death		
Pentachlorophenol		196	Fathead minor	Pimephales promelas	freshwater	larvae, 48-72h	Water	0.08 - 6 days	Whole body	45-151	"Radiotracer"	79.9	"Radiotracer"	Survival - reduced - death	
Pentachlorophenol		421	Fathead minor	Pimephales promelas	freshwater	larvae, juvenile	Water	32 days	Whole body	21.5		45.9		Survival - reduced - 77%	pH 6.5
Pentachlorophenol		421	Fathead minor	Pimephales promelas	freshwater	larvae, juvenile	Water	32 days	Whole body	12.3		25.1		Growth - reduced	pH 7.5
Pentachlorophenol		421	Fathead minor	Pimephales promelas	freshwater	larvae, juvenile	Water	32 days	Whole body	12.6		22.1		Growth - reduced	pH 8.0
Pentachlorophenol		421	Fathead minor	Pimephales promelas	freshwater	larvae, juvenile	Water	32 days	Whole body	22.1		43.8		Survival - reduced 71%	pH 8.0
Pentachlorophenol		421	Fathead minor	Pimephales promelas	freshwater	larvae, juvenile	Water	32 days	Whole body	17.8		35.1		Survival - reduced 25%	pH 8.5
Pentachlorophenol		436	Killifish	Oryzias latipes	freshwater	0.2-0.4g	Water	5 days	Whole body	35		65-122		Survival - reduced	Also have survival - no effect for test duration of 9 days - 60
Tributyltin															
Tri-n-butyltin chloride		308	Worm	Nearistes arenaceodentata	saltwater	juvenile-adult	Diet	70 days	Whole body	1.3		3.4		Survival - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor [430].Organisms exposed to TBT in a food slurry
Tri-n-butyltin chloride		308	Worm	Nearistes arenaceodentata	saltwater	juvenile-adult	Diet	70 days	Whole body	0.60		1.3		Growth, reproduction - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor [430].Organisms exposed to TBT in a food slurry
Tributyltin		398	Ramshorn snail	Marisa cornuarietis	freshwater	adult, female	Water	180 days	Whole body	0.16	0.32-0.36	Females ste	Reproduction - reduced - impos	NOER and LOER converted from dry weight to wet weight using 0.2 factor [430].Organisms exposed to TBT in a food slurry	
Antifouling paint		148	Dog-whelk	Nucella lapillus	saltwater	embryo-adult, female	Water	730 days	Whole body	0.08		0.18	Females ste	Reproduction - reduced - impos	NOER and LOER converted from dry weight to wet weight using factor given in paper.
Antifouling paint		449	Mussel	Mytilus edulis	saltwater	spat (young)	Water	45 days	Wet tissue	0.56		2.20		Growth - reduced	
Antifouling paint		449	Oyster	Crassostrea gigas	saltwater	spat (young)	Water	45 days	Wet tissue	0.63		2.38		Growth - reduced	
Antifouling paint		449	Oyster	Crassostrea gigas	saltwater	adult	Water	75 days	Meat	0.4		1.23		Growth - reduced	
Antifouling paint		449	Clam	Venerupis decussata	saltwater	spat (young)	Water	45 days	Wet tissue	0.19		0.4		Reproduction - reduced	
Tri-n-hexyltin chloride		441, 443	Guppy	Poecilia reticulata	freshwater	adult, male	Water	0.15 to 11	Whole body	1.1-1.8		0.52		Growth - reduced	
4,4'-DDT															
DDT		226	Coho salmon	Oncorhynchus kisutch	freshwater	embryo-fry	Adult fish (water)	1 day contain Whole body (embryo)	0.55-0.66		1.09-2.76			Survival - reduced	
Technical DDT		62	Coho salmon	Oncorhynchus kisutch	freshwater	fingerling, 3.7g	Diet	60 days	Whole body	16.6		113.0		Survival - reduced 85%	Residues = DDT + metabolites
DDT		99	Rainbow trout	Oncorhynchus mykiss	freshwater	"safr-fingerling" for red. s	Maternal	90 days	Whole body	0.064-0.178		1.14-142		Survival - reduced 90%	Residues = DDT + metabolites
DDT		211	Rainbow trout	Oncorhynchus mykiss	freshwater	egg-fry	Maternal; ovary	-60 days	Whole body (fry)	0.15-0.30		1.27		Survival - reduced (egg)	Residues = DDT + metabolites
p,p'-DDT		62	Chinook salmon	Oncorhynchus tshawytscha	freshwater	fingerling, 1.1g	Diet	40 days	Whole body	11.4		12.1-16.9		Survival - reduced 94%	Residues = DDT + metabolites
p,p'-DDT		62	Chinook salmon	Oncorhynchus tshawytscha	freshwater	fingerling, 1.1g	Diet	5 days contami	Whole body	2.2		11.6		Survival - reduced 53%	Residues = DDT + metabolites
DDT		218, 219	Fathead minnow	Pimephales promelas	freshwater	juvenile-adult	Water	266 days	Whole body	40	exposure route	57 exposure ro		Survival - reduced 25%	Residues = DDT + metabolites
DDT		411	Winter flounder	Pseudopleuronectes americanus	saltwater	embryo	Adult fish (water)	9-12 days in cle	Whole body	1.55		2.49-3.77		Survival - reduced 91%-99%	Residues = DDT+DDE
4,4'-DDE															
No records with both NOER and LOER that meet criteria															
4,4'-DDD															
No records with both NOER and LOER that meet criteria															
Groups															
Dioxins & Furans (as 2,3,7,8-TCDD toxicity equivalents)															
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)		304	Coho salmon	Oncorhynchus kisutch	freshwater	young	Water	4 days in conta	Whole body	0.125		2.2		Survival, growth - reduced	
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)		185	Rainbow trout	Oncorhynchus mykiss	freshwater	Juvenile	Diet	105 days	Whole body	0.0016		1.38		Survival, growth - reduced	Radiotracer study. Also have survival - reduced 45% (0.00098) for test duration 28 days in contaminated water, 28 days in clean water with survival determined at 56 days
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)		296	Rainbow trout	Oncorhynchus mykiss	freshwater	fry, 0.38g	Water	28 days	Whole body	0.00098	Survival deter	0.00452		Survival - reduced 50%	Radiotracer study. Also have reduced - 50% (0.233) and reduced - death (0.337-0.470)
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)		473	Brook trout	Salvelinus fontinalis	freshwater	egg-sac fry	Water	2 days in conta	Whole body (egg)	0.135		0.185		Survival (sac fry) - reduced	Radiotracer study. Also have reduced - death (0.11)
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)		496	Lake trout	Salvelinus namaycush	freshwater	egg-sac fry	Water	2 days in conta	Whole body (egg)	0.043		0.072		Survival (sac fry) - reduced	20% Radiotracer study. Also have reduced - 50% (0.065) and hatchability reduced (0.226)
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)		91	Lake trout	Salvelinus namaycush	freshwater	egg-sac fry	Water	2 days in conta	Whole body (egg)	0.034		0.055		Survival (sac fry) - reduced	Radiotracer study.
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)		470	Lake trout	Salvelinus namaycush	freshwater	egg	Maternal	30 days in cle	Whole body	0.00015		0.00023		Survival - reduced	Radiotracer study.
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)		470	Lake trout	Salvelinus namaycush	freshwater	egg-sac fry	Maternal	120 days in cle	Whole body (egg)	0.00023		0.00005		Survival (sac fry) - reduced	Radiotracer study. Also have reduced - 50% (0.00006) and reduced - death (0.000145)
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)		470	Lake trout	Salvelinus namaycush	freshwater	egg-sac fry	Water	2 days in conta	Whole body (egg)	0.000034		0.00004		Survival (sac fry) - reduced	Radiotracer study. Also have reduced - 50% (0.00007) an dredged - death (0.00012)
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)		426	Lake trout	Salvelinus namaycush	freshwater	egg-sac fry-fry	Water	2 days in conta	Whole body (egg)	<0.000015		0.00004		Survival (sac fry) - reduced	Radiotracer study. Also have recued - death (0.0004)
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)		471, 474	Lake trout	Salvelinus namaycush	freshwater	egg-sac fry-fry	Water	2 days in conta	Whole body (egg)	0.000034		0.000055		Survival (sac fry) - reduced	Radiotracer study
2,3,7,8-TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin)		474	Lake trout	Salvelinus namaycush	freshwater	egg-sac fry-fry	Water	2 days in conta	Whole body (egg)	0.000034		0.000055		Survival, growth - reduced	Radiotracer study. Also have survival (sac fry) - reduced 50% (0.000065)
2,8-DDDD - (2,8-Dichlorodibenzo-p-dioxin)		408	Goldfish	Carassius auratus	freshwater	Adult, 2.12g	Water	4 days	Whole body	0.11-0.13	3 *Fish were mo	1.3-1.8	6 Residue in	Survival - reduced - death	
2,8-DDDD - (2,8-Dichlorodibenzo-p-dioxin)		407	Goldfish	Carassius auratus	freshwater	Adult, 4.2g	Water	4 days	Whole body	0.11-0.13		1.3-1.8		Survival - reduced - death	
2,3,7,8-TCDF (2,3,7,8-Tetrachlorodibenzofuran)		296	Rainbow trout	Oncorhynchus mykiss	freshwater	fry, 0.38g	Water	28 days in conta	Whole body	0.0025		0.0093-0.0119		Survival - reduced	Radiotracer study. Same numbers as below!
2,3,7,8-TCDF (2,3,7,8-Tetrachlorodibenzofuran)		296	Rainbow trout	Oncorhynchus mykiss	freshwater	fry, 0.38g	Water	28 days in conta	Whole body	0.0025		0.0093-0.0119		Growth - reduced	Radiotracer study. Same numbers as above!
Total PCBs (as 2,3,7,8-TCDD toxicity equivalents)															
2,2',3,3',5,5'-Hexachlorobiphenyl		344	Guppy	Poecilia reticulata	freshwater	adult, male	Diet	65 days	Whole body	100		281-355		Survival - reduced	
2,2',3,3',4,6,6'-Octachlorobiphenyl		344	Guppy	Poecilia reticulata	freshwater	adult, male	Diet	65 days	Whole body	100		144-446		Survival - reduced	
3,3',4,4'-Tetrachlorobiphenyl		115	Cladoceran	Daphnia magna	freshwater	neonate-adult	Water	21 days	Whole body	1.3		11		Growth - reduced	NOER and LOER converted from dry weight to wet weight using 0.2 factor (ref 430)
3,3',4,4',5-Pentachlorobiphenyl (PCB 126)		496	Lake trout	Salvelinus namaycush	freshwater	egg-sac fry	Water	2 days in conta	Whole body (egg)	13.2		27.2		Survival (sac fry) - reduced 30%	Radiotracer study
Total PCBs (as Aroclors)															
Aroclor 1254		122	Pink shrimp	Penaeus duorarum	saltwater	juvenile	Water	2 days	Whole body	1.3		3.9		Survival - reduced - death	
Aroclor 1254		329	Grass shrimp	Palamenes pugio	saltwater	mixed life stages	Water	7 days	Whole body	5.4		65.0		Survival - reduced - 60%	
Aroclor 1254		329	Grass shrimp	Palamenes pugio	saltwater	mixed life stages	Water	16 days	Whole body	18.0		27.0		Survival - reduced - 45%	
Aroclor 1254		283	Coho salmon	Oncorhynchus kisutch	freshwater	fingerling	Diet	265 days	Whole body	54-57		645-659	All fish died	Survival - reduced - death	Radiotracer study. NOER also for growth - no effect
Aroclor 1254		145	Brook trout	Salvelinus fontinalis	freshwater	embryo	Adult fish	21 days	Whole body	<0.5				Survival - reduced	